

DESIGN SERVICES AGREEMENT FOR DURANGO HILLS WRC PROCESS UPGRADES

THIS AGREEMENT is made and entered into this _____ day of _____, _____, by and between the CITY OF LAS VEGAS, a municipal corporation within the State of Nevada (herein the "City") whose address is 400 Stewart Avenue, Las Vegas, Nevada 89101, and fax number is (702) 384-4846, and MWH AMERICAS, INC., (the "Consultant"), a Corporation, whose address is 3010 W. Charleston Blvd., Suite 100, Las Vegas, NV, 89102, and fax number is (702) 878-7833.

WITNESSETH:

WHEREAS, the City intends to construct the Durango Hills WRC Process Upgrades (herein the "Project"); and

WHEREAS, the City desires to retain the Consultant who will be responsible for providing the professional services more fully described below and in the exhibits attached hereto; and

WHEREAS, the Consultant is properly licensed pursuant to NRS Chapter 623, 623A, or 625, whichever is legally required for the services to be provided within the State of Nevada, and possesses the special knowledge, skills and expertise to perform the services hereinafter set forth within the time required under this Agreement.

NOW, THEREFORE, in consideration of the above premises, the parties hereto agree to the following terms, conditions and covenants set forth in Sections One through Ten hereof:

SECTION ONE CONSULTANT RESPONSIBILITIES

1.01 Description of Consultant's Services. For the compensation set forth in Section Seven, the Consultant hereby agrees to perform the basic services set forth in the Scope of Services, **Exhibit "A"** attached hereto and incorporated herein as a part of this Agreement and, if so requested, the additional services set forth in the Additional Compensation, **Exhibit "E"** attached hereto and incorporated herein as a part of this Agreement and to provide the submittals described in the Required Submittals **Exhibit "B,"** attached hereto.

1.02 Performance Standards. In performing the services set forth in this Agreement, the Consultant shall follow the practices consistent with the generally accepted standards in the profession of the services being provided to the City pursuant to this Agreement.

1.03 Document Review. The Consultant shall be responsible for reviewing each document prepared by the Consultant and its subconsultants including, without limitation, the plans, drawings and specifications for the purpose of ensuring that such documents are technically sound, in conformance with applicable federal, state and local laws and other regulations, and do not violate or infringe upon any patent rights.

1.04 Waiver. The City's approval of any documents or services furnished by the Consultant shall not in any way relieve the Consultant of responsibility for the professional and technical accuracy of its documents or services. The City's review, approval, acceptance or payment for any of the Consultant's services shall not be construed to operate as a waiver of any rights enjoyed by the City under this Agreement or of any cause of action arising out of the performance of this Agreement. The Consultant shall remain liable for any damages to the City caused by the Consultant's negligent act or omission committed in the performance of this Agreement.

1.05 Designation of Consultant's Representative. The Consultant's representative is the individual identified in the Key Personnel List, **Exhibit "F"** attached hereto (the "Consultant Representative") to act in that capacity, who shall be responsible for the services required under this Agreement. The services specified by this Agreement shall be performed by the personnel identified in the Key Personnel List provided that such associates and employees perform under the personal supervision of the Consultant Representative.

If any person or subconsultant who is expected to provide any of the services required under this Agreement is objectionable to the City for any reason, the Consultant shall, without additional compensation, replace such person or subconsultant with someone acceptable to the City.

If the Consultant's personnel are unable to complete their responsibilities for any reason under this Agreement, or the Consultant desires for any reason to substitute personnel assigned to the Project, the Consultant agrees to obtain the approval of the City for the substitution. The City shall not unreasonably deny approval unless the City adjudges the substitution not be in the interest of the City or the Project.

If the Consultant fails to make an acceptable replacement within thirty (30) days, the City may terminate this Agreement for default as provided in Section 10.03 of this Agreement.

1.06 Correspondence Review. The Consultant shall furnish the City Representative copies of each correspondence, if any, sent to any contractor involved with the Project, and to any regulatory agencies, for approval and review prior to mailing such correspondence.

1.07 Cooperation with the City. The Consultant agrees that its officers, associates, employees and subconsultants will cooperate with the City in providing the services under this Agreement and will be, with advance notice, available for consultation with the City at such reasonable times as to not conflict with the City's other responsibilities.

1.08 Responsibility for Construction Document Revisions.

A. Applicability. The Consultant's responsibility described in this Section applies only if the Consultant is responsible for providing a construction cost estimate and preparing construction documents for the Project.

B. Responsibility for Revisions. The Consultant does not warrant or represent that the bids or proposed price received by the City to construct the Project will come within the Construction Cost Budget set forth in the Scope of Services or as may be otherwise agreed upon in writing by parties. If the bids or proposed price received by the City exceeds the Construction Cost Budget, the Consultant agrees to cooperate with the City in revising the requirements of the Project as required to lower the cost to come within the Construction Cost Budget and to modify the construction documents without additional compensation. In order to meet the Construction Cost Budget, the Consultant may, with the approval of the City, segregate portions of the work as separate alternate bid items so that bids received by the City to construct the Project will come within the Construction Cost Budget.

"Construction Cost Budget" as used herein means the monetary limit established by the City for construction of the Project which limit includes the cost of the Contractor's labor, materials, equipment, expenses, overhead and profit, but excludes the Project's soft costs, cost of change orders and other cost impacts encountered after award of the construction contract.

SECTION TWO CITY RESPONSIBILITIES

2.01 City Representative. The Director of Public Works or his authorized representative identified in the Key Personnel List is hereby designated as the City's representative (the "City Representative") with respect to this Agreement. The City Representative shall have complete authority to transmit instructions, receive information, interpret and define the City's policies and decisions with respect to the services of the Consultant. The City Representative is not authorized to change or waive any of the provisions set forth in Sections 1.01 through 10.24 of this Agreement.

2.02 Review of Consultant's Services and Documents. The services to be performed by the Consultant shall be subject to periodic review by the City Representative. To prevent an unreasonable delay in the Project, the City Representative will endeavor to examine and comment in writing on the documents furnished by the Consultant including, without limitation, the plans, drawings, specifications, test results, evaluations, and reports within twenty-one (21) days of receipt of such documents, unless the Contract provides for a different review time with respect to the document.

2.03 Access to Records. The City shall, without charge, furnish a copy to, or make available for examination or use by, the Consultant, as it may request, any documents and data which the City has available including, without limitation, reports, maps, plans, specifications, surveys, records, ordinances, codes, regulations, and other documents related to the services required under this Agreement. The City shall assist the Consultant in obtaining data and documents from public agencies and from private citizens and business firms whenever the City determines that such material is necessary for the completion of the services required by this Agreement.

2.04 Cooperation with Consultant. The City agrees that its officers and employees will cooperate with the Consultant in the performance of this Agreement and will be, with advance notice, available for consultation with the Consultant at such reasonable times as to not conflict with the Consultant's other responsibilities. The City shall provide access to the Consultant on to the Project site as may be required to perform the services under this Agreement.

SECTION THREE CHANGES TO CONSULTANT'S SERVICES

3.01 Requested Changes. The City may at any time, by written order, make a change in the services to be performed by the Consultant under this Agreement.

3.02 Adjustment of Compensation. If the change requested by the City causes an increase or decrease in the cost or time required to perform any of the services required under this Agreement, an equitable adjustment shall be made in the compensation to be paid to the Consultant under Section Seven, or in the performance schedule under Section Eight, or both, and this Agreement shall be modified in writing accordingly. Each claim for adjustment under this Section must be asserted in writing within thirty (30) days from the date of receipt by the Consultant of written notification of the change, unless the City grants in writing an extension. Provided proper notice has been given to the City as required herein, the claim for an adjustment shall be handled pursuant to the provisions of 10.20B and 10.20C of this Agreement. The failure to provide notification of the claim within the time required herein shall constitute a waiver of the right to seek any equitable or legal adjustment in compensation with respect to that change.

SECTION FOUR ADDITIONAL SERVICES OF CONSULTANT

4.01 Additional Services. The Consultant shall provide the additional services described in the Additional Compensation if, and only if, so requested in writing by the City. Payment for the additional services will be made to the Consultant in accordance with Section Seven of this Agreement.

4.02 Attendance at Meetings or Public Hearings. The Consultant shall notify the City in advance of any additional costs which may be incurred prior to attending any meetings or public hearings as may be necessary in connection with the services performed by the Consultant under this Agreement.

SECTION FIVE SUBCONSULTANT AGREEMENT

5.01 Subconsultant Provisions. If, with the approval of the City as required pursuant to Section 10.07, the Consultant enters into an agreement with a subconsultant for the performance of any of its obligations under this Agreement, the Consultant agrees to include in each subconsultant agreement a provision that:

(i) the Consultant agrees to pay the subconsultant when paid by the City for that portion of the services provided to the City and that no liability arises on the part of the Consultant for payment of the subconsultant services until payment has been made by the City. If the City has paid the Consultant for the subconsultant services, the subconsultant's only recourse is against the Consultant and not against the City, either through the institution of legal or equitable action or the attachment of any lien,

(ii) the subconsultant shall have no more rights against the City than that of the Consultant,

(iii) the subconsultant agrees to be bound by the terms, conditions and obligation of this Agreement unless the City has approved any deviation, change or modification in writing, and

(iv) unless otherwise approved in writing by the City Representative, the subconsultant shall obtain and maintain professional liability insurance (Errors and Omissions coverage) in connection with the subconsultant services in an amount equal to that required of the Consultant in this Agreement.

SECTION SIX TERM OF AGREEMENT

6.01 Term. This Agreement shall commence on the day it is approved by the City (which date shall be inserted in the introductory paragraph of this Agreement) and shall remain in force and effect until the Project is completed unless terminated earlier pursuant to Section 10.02 or 10.03 of this Agreement. Such termination shall not release either party from any of its continuing obligations under this Agreement.

6.02 Disputes. This Section shall not be construed to preclude the filing of any dispute arising out of the performance of this Agreement or in connection with the subject matter hereof, nor shall this Section be construed to change the date or the time on which a cause of

action arising out of the performance of this Agreement or in connection with the subject matter hereof, would otherwise accrue under the statutes of limitation or doctrines of law.

SECTION SEVEN COMPENSATION AND TERMS OF PAYMENT

7.01 Compensation: Basic Services. For the services to be performed by the Consultant under this Agreement and set forth in the Scope of Services, the City agrees to pay the Consultant the fee in the amount identified in the Fee Breakdown, **Exhibit "D"** attached hereto, pursuant to invoices submitted in accordance with Section 7.04 of this Agreement.

7.02 Compensation: Additional Services. For any services not set forth in the Scope of Services, the City shall pay to the Consultant either a lump sum fee, or an hourly fee based on the hourly labor rate schedule set forth in the Additional Compensation, whichever is agreed to by the parties, provided prior written approval for such services is given by the City Representative.

7.03 Compensation: Reimbursable Expenses. The Consultant agrees that all of its direct and indirect expenses are included in the fee for Basic Services and the agreed upon compensation for any Additional Services, except as may be specifically allowed for reimbursable expenses as part of the Additional Compensation.

7.04 Payment Invoicing. The Consultant may submit an invoice for payment for the services provided by the Consultant based on the manner or method of payment set forth in the Fee Breakdown. The City Representative will notify the Consultant of any problems regarding the invoice within fourteen (14) days from receipt thereof. If no response is received from the City Representative within the aforementioned period of time, the Consultant may expect payment within a period of (30) days from the date of receipt by the City. If payment has not been received within the thirty (30) days, the Consultant agrees to contact the City Representative to resolve the problem causing the delay. If resolution of the delay is not satisfactory to the Consultant, the Consultant may submit a claim pursuant to Section 10.20A of this Agreement.

7.05 Right to Off-Set. The City Representative may subtract or offset from any unpaid invoice from the Consultant any claims which the City may have for failure of the Consultant to comply with the terms, conditions or covenants of this Agreement, or any damages, costs and expenses caused by, resulting from, or arising out of the negligent act or omission of the Consultant in the performance of the services under this Agreement including, without limitation, any error or deficiency in the report or other documents prepared by the Consultant. The City Representative shall provide a written statement to the Consultant of the off-set which has been subtracted from any payment to the Consultant along with appropriate documentation and receipts, if any, and a description of the failure, error or deficiency attributed to the Consultant. If the Consultant disputes the right or amount of the off-set made by the City, the Consultant may file a claim pursuant to Section 10.20 of this Agreement.

7.06 Final Payment. Upon completion of the services required under this Agreement, and acceptance thereof by the City (which acceptance will not be unreasonably withheld), the Consultant will, within sixty (60) days of the City's acceptance, be paid the balance of any money due for such services.

SECTION EIGHT PERFORMANCE SCHEDULE

8.01 Performance Schedule. The Consultant shall perform and complete the services required under this Agreement according to the schedule (the "Performance Schedule") set forth in the Schedule of Performance, **Exhibit "C"** attached hereto. If the performance of services is delayed or submittals are not delivered in the time period as outlined in the Performance Schedule, the Consultant shall notify the City Representative in writing of the reasons for the delay and include a plan which brings the Consultant's performance into compliance with the Performance Schedule.

SECTION NINE AUDIT: ACCESS TO RECORDS

9.01 Records. The City shall have the right to audit the Consultant's books, records and other documents directly pertinent to the performance of this Agreement. The Consultant agrees to maintain books, records and other documents directly pertinent to performance of this Agreement in accordance with generally accepted accounting principles and practices. The Consultant shall also maintain the financial information and data used to prepare or support the invoices submitted to the City. Audits conducted pursuant to this provision shall be in accordance with generally accepted auditing standards, procedures and guidelines of the City, or its designated representative. The City, or its duly authorized representatives, shall have access to such books, records, and documents for the purpose of inspection, audit and copying. The Consultant will provide proper facilities for such access and inspection.

9.02 Disclosure. The Consultant shall be afforded the opportunity for an audit entrance and exit conference and an opportunity to

comment and submit any supporting documentation on the pertinent portions of the draft audit report, and that the final audit report will include the written comments, if any, of the Consultant.

9.03 **Period of Maintenance.** The books, records and other documents under Sections 9.01 and 9.02 of this Agreement shall be maintained for three (3) years after the date of the final payment for the services under this Agreement. In addition, those records and other documents which relate to any arbitration, litigation or the settlement of any claim arising out of this Agreement, or to which an audit exception has been taken, shall be maintained and made available until three (3) years after the date that the arbitration, litigation or exception has been resolved.

9.04 **Subcontract Provisions.** The Consultant agrees to include Sections 9.01 through 9.03 of this Agreement in all its subcontracts directly related to performance of services specified in this Agreement which are in excess of \$10,000.

SECTION TEN MISCELLANEOUS PROVISIONS

10.01 **Suspension.** The City may suspend, without cause, the performance by the Consultant under this Agreement for such period of time as the City, in its sole discretion, may prescribe by providing written notice to the Consultant. The suspension shall be effective as of the date set forth in the written notice. With such suspension, the City agrees to pay to the Consultant the amount of compensation, based on percentage of completion of the Project, earned as of the effective date of suspension less all previous payments. The Consultant shall not provide any further services under this Agreement after the effective date of suspension until otherwise notified in writing by the City. In no event shall the City be liable to the Consultant for services in excess of the percentage of the Project completed at the time of suspension.

If, after notice to resume performance has been given by the City, the suspension was for a period in excess of ninety (90) days, which has resulted in an increase in the performance of the Agreement to the Consultant and:

- (i) the Consultant was not a contributing cause for the suspension,
- (ii) the Consultant has not received an equitable adjustment under another provision of this Agreement, and
- (iii) the Consultant could not mitigate the increase in the performance cost,

then the Consultant's fee shall be reviewed by the City and, if justified, equitably adjusted to provide for any additional expenses resulting from the suspension.

10.02. **Termination for Convenience.** The City reserves the right to terminate this Agreement without cause or default on the part of the Consultant with ten (10) days' prior written notification to the Consultant served pursuant to Section 10.18 of this Agreement. In the event of termination, without cause or default, the City agrees to pay to the Consultant the reasonable value for the services performed as of the date that notification of termination is received by the Consultant. In no event shall the City be liable to the Consultant for services in excess of the percentage completed at the time of termination.

10.03 **Termination for Cause or Other Resolution.**

A. Default. The occurrence of any of the following events shall constitute a default by the Consultant hereunder (herein "Event of Default"). If, during the term of this Agreement, the Consultant:

- (i) defaults in the due observance and performance of any term, condition or covenant contained in this Agreement,
- (ii) (a) voluntarily terminates operations or consent to the appointment of a receiver, trustee or liquidator of the Consultant for all or a substantial portion of its assets, (b) is adjudicated bankrupt or insolvent or files a voluntary petition in bankruptcy, or admits in writing to the inability to pay its debts as they become due, (c) make a general assignment for the benefit of creditors, (d) file a petition or answer seeking reorganization or an arrangement with creditors or take advantage of any insolvency law, or (e) if action shall be taken by the Consultant for the purpose of effecting any of the foregoing,
- (iii) allows any warrant, execution or other writ to be issued or levied upon any property or assets of the Consultant which continues unvacated and in effect for a period of thirty (30) days, or
- (iv) fails, in the judgment of the City, to provide the services hereunder properly and with proper dispatch in accordance with the time schedule set forth in this Agreement,

and the default continues five (5) days after written notice is given to the Consultant pursuant to Section 10.18.

B. City's Rights. Upon the occurrence of an Event of Default, and without prejudice to any other right or remedy it may have at law or equity, the City may:

(i) terminate this Agreement, suspend payment of all pending invoices otherwise due to the Consultant hereunder, and finish this Agreement by such means as deemed appropriate by the City, reserving the right to deduct from any balance due Consultant the cost of completing this Agreement. In the event the cost of finishing the Consultant's performance of this Agreement exceeds the balance due the Consultant, the excess shall be paid by the Consultant to the City within five (5) days of invoicing by the City,

(ii) terminate this Agreement, and the obligations imposed hereunder, including the obligation of any further payment for the services of the Consultant except for the reasonable value for the services performed to the date of termination, or

(iii) Continue with performance by the Consultant and serve within a reasonable time after completion of the Agreement a request to arbitrate the Event of Default as a claim or dispute pursuant to the arbitration procedure set forth in Section 10.20.

In the event that the City elects to implement (i) above, the costs and expenses of completing this Agreement shall be computed and audited by the City's designated representative. The audit shall be conducted in accordance with generally accepted accounting principles and the cost thereof shall be paid by the Consultant.

10.04 Ownership of Documents.

A. Architectural Works. To the extent that the Consultant's services involves the design of an architectural work as defined herein, the Consultant shall retain all common law and statutory rights of ownership, including copyrights, to the drawings and specifications prepared by the Consultant for this Project. The Consultant is deemed to be the author of the drawings and specifications as instruments of service to the City. Notwithstanding the foregoing, the Consultant hereby grants to the City the right to use (including the right of reproduction and use in the creation of new documents) the drawings and specifications for the purpose of completing the Project or for any subsequent maintenance, repair, renovation, remodeling or addition thereto. The rights granted herein to the City shall extend and include any new consultant which the City may retain for the aforementioned purposes. The Consultant hereby releases the City, and any new consultant retained by the City for the aforementioned purposes, from any and all claims in connection with the use or reproduction of the drawings and specifications. The Consultant agrees to execute such documents reasonably deemed necessary by the City to implement the rights granted to the City pursuant to this subsection including written permission to make changes or modifications to the plans.

B. Other Works. To the extent that the Consultant's services does not involve the design of an architectural work, the City shall have all common law and statutory rights of ownership, including copyrights, to the plans, drawings, specifications and other documents (including, without limitation, design concepts and sketches, test results, evaluations, reports and studies, excepting any proprietary forms, templates, and checklists specifically listed for City ownership exclusion elsewhere in this Agreement) (collectively herein the "Documents") prepared or assembled by the Consultant, or any of its subconsultants, for this Project. The Consultant hereby releases the City, and any new consultant retained by the City from any and all claims in connection with the use or reproduction of the Documents. The Consultant agrees to execute such documents reasonably deemed necessary by the City to implement the rights granted to the City pursuant to this subsection including written permission to make changes or modifications to the plans. The Consultant shall be entitled to retain a reproducible copy of the documents furnished to the City.

C. Definition of Architectural Work. For purposes of this Agreement, "architectural work" shall have the same definition as set forth in Architectural Works Copyright Protection Act of 1990, P. L. 101-650, Title VII, Section 70 et. seq.

D. Delivery of Documents. In the event of the completion, suspension or termination of this Agreement, the City shall have the right to require delivery of any and all of the plans, drawings, specifications, and all other documents (including, without limitation, design concepts and sketches, test results, evaluations, reports and studies), including the magnetic or electronic media of the aforementioned documents, not in the possession of the City.

E. Confidentiality. The plans, drawings, specifications and other documents (including, without limitation, design concepts and sketches, test results, evaluations, reports and studies) (including the magnetic or electronic media of the aforementioned documents) which are prepared or assembled by the Consultant, or its subconsultants, under this Agreement shall not be made available to any individual or organization without the prior written consent of the City. Except for marketing pamphlets and submittals to clients, the Consultant shall not publish, submit for publication, or publicly display the Project without the written consent of the City. The obligations of confidentiality shall survive the termination of this Agreement.

F. Contractual Rights. Notwithstanding the provisions of 10.04 A above, the City is hereby licensed to use all design concepts developed by the Consultant and subconsultants under this Agreement, including the right to construct derivative works of the Project, and to use the

design concepts for other projects of the City at the City's sole risk. The design concepts include, but are not limited to, the form, aesthetic appeal, site layout, the arrangement and composition of spaces and elements, the use of colors and materials, system designs, construction methods and interior design.

10.05 Insurance. The Consultant shall procure and maintain, at its own expense, during the entire term of the Agreement, the following insurances:

A. Workmen's Compensation Insurance. This insurance shall protect the Consultant and the City from employee claims based on job-related sickness, disease, or accident.

B. Comprehensive General Liability Insurance. This insurance shall protect the Consultant, its agents and vehicles used to provide the services required under this Agreement from claims of personal injury (including death) and property damage. Such coverage shall be in a minimum amount of \$1,000,000 for the period of time covered by this Agreement. The Consultant's general liability insurance policies shall be endorsed to include the City as an additional insured.

C. Professional Liability Insurance (Errors and Omissions Coverage). This insurance shall protect the Consultant from claims arising out of performance of professional services caused by a negligent act, error, or omission for which the insured is legally liable. Such coverage shall be in a minimum amount of \$1,000,000 for the period of time covered by this Agreement.

D. Cancellation or Modification of Coverage. The Consultant's Comprehensive General Liability Insurance Policy shall automatically include or be endorsed to cover the Consultant's contractual liability to the City under this Agreement, and with respect to its Comprehensive General Liability Policy, to waive subrogation against the City, its officers, agents, servants and employees. The policies shall provide that the City will be given thirty (30) days' notice in writing of any cancellation of, or material change in, the policies.

E. Certificates and Endorsements. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer and licensed by the State of Nevada. All deductibles and self-insured retentions shall be fully disclosed in the Certificate of Insurance. No deductible or self-insured retention may exceed \$25,000 without the written approval of the City. Certificates indicating that such insurance is in effect shall be delivered to the City before any services are provided under this Agreement.

F. Period of Coverage. If the insurance coverage is underwritten on a "claims made" basis, the retroactive date shall be prior to or coincident with the date of this Agreement and the Certificate of Insurance shall state that coverage is "claims made" and the retroactive date. Upon availability, the Consultant shall maintain coverage for the duration of this Agreement and for two years following completion of this Agreement. The Consultant shall provide the City annually a Certificate of Insurance as evidence of such insurance.

10.06 Indemnity. Notwithstanding any of the insurance requirements set forth in Section 10.05, and not in lieu thereof, the Consultant shall defend, indemnify and hold the City, its officers, employees and agents (herein the "Indemnitees"), harmless from any and all claims (including, without limitation, patent infringement and copyrights claims), damages, losses, expenses, suits, actions, decrees, judgments, arbitration awards or any other form of liability (including, without limitation, reasonable attorney fees and court costs) (collectively herein the "Claims") which the Indemnitees may suffer as a result of, by reason of, or as a consequence of, the negligent errors, omissions, recklessness, intentional misconduct of the Consultant, its subcontractors, agents or anyone employed by the Consultant, its subcontractors or agents, in the performance of this Agreement.

As part of its obligation hereunder, the Consultant shall, at its own expense, defend the Indemnitees against the Claims which may be brought against them, or any of them, as a result of, by reason of, or as a consequence of, the negligent act or omission of the Consultant, its subcontractors or agents, for and against which the Consultant is obligated to indemnify the Indemnitees, unless the Indemnitees, or any of them elect to conduct their own defense which, in such case, shall not relieve the Consultant of its obligation of indemnification set forth herein. If the Consultant fails to do so, the Indemnitees shall have the right, but not the obligation, to defend the same and charge the direct and incidental costs of such defense (including attorney fees and court costs) against the Consultant which is proportionate to the liability of the Consultant.

If the professional liability insurer of the Consultant does not so defend the Indemnitees and the Consultant is adjudicated to be liable by a trier of fact, the trier of fact shall award reasonable attorney's fees to be paid to the Indemnitees by the Consultant in an amount which is proportionate to the liability of the Consultant. As used in this Section, "agents" means those persons who are directly involved in and acting on behalf of the City in furtherance of this Agreement or the public work to which this Agreement pertains.

10.07 Assignment. The City and the Consultant each bind itself and its partners, successors, administrators and assigns to the other party of this Agreement and to the partners, successors, executors, administrators and assigns of such other party in respect to all covenants of this Agreement, except the Consultant shall not assign, sublet or transfer any obligation or benefit under this Agreement without the written consent of the City. Nothing contained herein shall be construed as creating any personal liability on the part of any officer or agent of the City.

10.08 Waiver. No consent or waiver, express or implied, by either party to this Agreement, or of any breach or default by the other in the performance of any obligations hereunder, shall be deemed or construed to be a consent or waiver of any other breach or default by such party hereunder. Failure on the part of any party hereto to complain of any act, or failure to act of the other party, or to declare that other party in default hereunder, irrespective of how long such failure continues, shall not constitute a waiver of the rights of such party hereunder. Inspection, payment, or tentative approval or acceptance by the City or the failure of the City to perform any inspection hereunder, shall not constitute a final acceptance of the work or any part thereof and shall not release the Consultant of any of its obligations hereunder.

10.09 Consultant Warranties. The Consultant hereby represents and warrants that:

(i) it is financially solvent, able to pay its debts as they mature, and is possessed of sufficient working capital to complete this Agreement; that it is experienced, competent, qualified and able to furnish the plant, tools, materials, supplies, equipment and labor which is used to perform the services contemplated by this Agreement, and that it is authorized to do business in the City of Las Vegas and the State of Nevada,

(ii) it holds a license, permit or other special license to perform the services included in this Agreement, as required by law, or employs or works under the general supervision of the holder of such license, permit or special license, and

(iii) it has, pursuant to the requirements of Resolution 79-99 adopted by the City Council on August 4, 1999, (effective October 1, 1999), as amended by resolution 105-99 (adopted by the City Council on November 17, 1999), disclosed on the form attached hereto as **Exhibit "G"** (Disclosure of Ownership/Principals) all of the principals, including partners, of the Consultant, as well as all persons and entities holding more than a one percent (1%) interest in the Consultant or any principals of the Consultant. If the Consultant, or its principals or partners, are required to provide disclosure under federal law (such as Securities and Exchange Commission or the Employee Retirement Income Act) and current copies of such federal disclosures are attached to **Exhibit "G,"** the requirements of this Section shall be deemed satisfied. During the term of this Agreement, the Consultant shall notify the City in writing of any material change in the above disclosure on **Exhibit "G"** within fifteen (15) days of such change.

10.10 Consultant's Employees. The Consultant shall be responsible for maintaining satisfactory standards of competency, conduct and integrity, of personnel assigned to the Project, and shall be responsible for taking such disciplinary action with respect to such personnel as may be necessary. In the event the Consultant fails to remove any employee from the work of this Agreement whom the City deems incompetent, careless or insubordinate, or whose continued employment on the work is deemed by the City to be contrary to the public interest, the City reserves the right to require such removal as a condition for the continuation of this Agreement.

10.11 Independent Contractor. It is hereby expressly agreed and understood that in the performance of the services required herein, the Consultant and any other person employed by him hereunder shall be deemed to be an independent contractor and not an agent or employee of the City.

10.12 Applicable Law. This Agreement shall be construed and interpreted in accordance with the laws of the State of Nevada.

10.13 Compliance with Laws. The Consultant shall in the performance of its obligations hereunder comply with all applicable laws, rules and regulations of all governmental authorities having jurisdiction over the performance of this Agreement including, without limitation, the Federal Occupational Health and Safety Act and all state and federal laws prohibiting and/or related to discrimination by reason of race, sex, age, religion or national origin.

10.14 Severability. In the event that any provisions of this Agreement shall be held to be invalid or unenforceable, the remaining provisions of this Agreement shall remain valid and binding on the parties hereto.

10.15 Confidentiality. The Consultant shall treat the information relating to the Project, which has been produced by the Consultant or provided by the City, as confidential and proprietary information of the City and shall not permit its release to other parties or make any public announcement or publicity release without the City's written authorization. The Consultant shall also require each subconsultant to comply with this requirement. The submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication relieving the Consultant of its confidentiality obligation imposed herein.

10.16 Site Inspection. The Consultant represents that it has visited the location of the Project and has satisfied itself as to the general condition thereof and that the Consultant's compensation as provided for in the Agreement is just and reasonable compensation for performance hereunder including reasonably foreseen and foreseeable risks, hazards and difficulties in connection therewith based on such above-ground observations.

10.17 Modification. All modification or amendments to this Agreement are null and void unless reduced in writing and signed by the parties hereto.

10.18 **Notice.** Any written notice required to be given under Sections 1.01 through 10.24 of this Agreement shall be deemed to have been given when the written notice is (i) received by the party to whom it is directed by personal service (ii) telephonically faxed to the telephone number set forth in the introductory paragraph to this Agreement, provided confirmation of the transmission is received by the sender, or (iii) deposited with the United States Postal Service, postage prepaid, addressed to the City Representative or the Consultant Representative, whomever is the proper recipient, and mailed to the address set forth in the introductory paragraph to this Agreement.

10.19 **Prohibition Against Contingent Fees.** The Consultant warrants that no person or entity has been employed or retained to solicit or secure this Agreement with the Agreement or understanding that a commission, percentage, brokerage or contingent fee would be paid to that person. For breach or violation of this provision, the City shall have the right to annul this Agreement without liability or, in its discretion, to deduct from the compensation to be paid to the Consultant, or otherwise recover, the full amount of such commission, percentage, brokerage or contingent fee.

10.20 **Claim or Dispute Resolution.**

A. Notice of Claim or Dispute. For each claim or dispute which the Consultant has against or with the City (except for any claim for an equitable adjustment under Section 3.02 which is subject to the 30-day limitation set forth therein), notice thereof must be submitted in writing to the City Representative within a reasonable time after the claim or dispute arises, but no later than thirty (30) days after final payment is made to the Consultant. The purpose of written notification is to place the City on notice so that proper measures can be taken to properly defend against the claim or dispute, and the failure to give such notice shall preclude the Consultant from subsequently arbitrating that particular claim or dispute pursuant to Section 10.20C of this Agreement, and the Consultant shall have no further recourse against the City. Pending a final decision on the claim or dispute under Sections 10.20B or 10.20C, the Consultant shall proceed diligently with the performance of this Agreement.

B. Resolution by Management. The City Representative and the Consultant Representative shall meet within a reasonable time after receipt of the written notice received pursuant to Section 10.20A in an attempt to resolve the claim or dispute to the mutual satisfaction of the parties. If the matter is not disposed of by mutual agreement between the City Representative and the Consultant Representative, the claim or dispute shall be decided by the Director of Public Works, whose decision shall be reduced to writing and mailed or otherwise furnished to the Consultant. The decision of the Director of Public Works shall be final and conclusive unless, within thirty (30) days after the date on which the Consultant receives its copy of such decision, the Consultant mails or otherwise furnishes to the Director of Public Works a written request to arbitrate the claim or dispute, in which event the parties shall proceed with the arbitration pursuant to provisions of Section 10.20B. The failure to make such request shall preclude the Consultant from proceeding any further on the claim or dispute, and the Consultant shall have no further recourse against the City.

C. Resolution by Arbitration. Upon receipt of the request to arbitrate authorized pursuant Section 10.03B or Section 10.20B, the City and the Consultant shall come to an agreement as to the appointment of an arbitrator for purposes of hearing the appeal. If the parties cannot reach an agreement, then each party shall select an arbitrator for purposes of the appeal, and the two shall select a third arbitrator within 20 days of their appointment. If the selected arbitrators are unable to agree upon the third arbitrator, the third arbitrator shall be selected by the American Arbitration Association or the Nevada Arbitration Association, whichever is designated by the City. Each party shall be afforded an opportunity to be heard and to offer evidence in support of or against the appeal. The decision of the arbitrator, or arbitrators, as the case may be for the determination of the appeal, shall be final, conclusive and enforceable under the laws of the State of Nevada.

D. Right of Consolidation. Any arbitration arising out of or relating to this Agreement may include, by consolidation, joinder or in any other manner, any additional party or parties who are not a party to this Agreement if so requested by the City or the Consultant. Any consent to arbitration involving an additional party or parties shall not constitute consent to arbitrate any claim or dispute not described as a part of the original arbitration unless otherwise agreed to by the parties.

E. Right of Joinder. In the event the City is named as a party to any arbitration, or the City commences an arbitration against a party other than the Consultant, which arbitration is related to, or connected with, the construction of the Project or the performance of the Consultant's services hereunder (such as, without limitation, any arbitration between the City and the Contractor awarded the contract to construct the Project), the Consultant agrees and irrevocably consents to be joined as a party in the arbitration proceeding and to be bound by any decision resulting therefrom. The decision of the arbitrator or arbitrators, as the case may be, in the arbitration to which the Consultant has been joined as a party, shall be binding and enforceable against the parties thereto under the laws of the State of Nevada.

If the Consultant is named as an additional party by the City, the Consultant shall not be entitled to any additional compensation from the City as a result of preparing for, and participating in, the arbitration.

F. Discovery. In the event of arbitration, the parties agree that all means of discovery including, but not limited to, depositions and interrogatories, will be afforded to the parties involved in the arbitration, and the appointed arbitrator shall have all authority to impose sanctions against either party for failing to comply with the rules of discovery provided under the Nevada Rules of Civil Procedure.

G. Award Final. The award rendered by the arbitrator shall be final, and judgment may be entered upon its accordance with applicable law in any court having jurisdiction thereof.

H. Mediation. Subsequent to the commencement of any arbitration pursuant to Section 10.20C, and prior to any decision arising therefrom, the parties may endeavor with written mutual consent to settle disputes by mediation in accordance with the mediation rules of the mediation service agreed by the parties. The cost of the mediation shall be shared equally by the parties.

10.21 Attorney Fees. The prevailing party in any litigation or arbitration brought to enforce the provisions of this Agreement shall be entitled to reasonable attorney fees and court costs.

10.22 Calendar Day. All references in this Agreement to days are to calendar days unless otherwise indicated.

10.23 Exhibits. All exhibits referenced in this Agreement are hereby incorporated by this reference as a part of this Agreement. Any conflict between the provisions of this Agreement and the Exhibits incorporated herein shall be governed by the provisions of this Agreement.

10.24 Counterparts; Electronic Delivery. This Agreement may be executed in counterparts, all such counterparts will constitute the same contract and the signature of any party to any counterpart will be deemed a signature to, and may be appended to, any other counterpart. Executed copies hereof may be delivered by facsimile or e-mail and upon receipt will be deemed originals and binding upon the parties hereto, regardless of whether originals are delivered thereafter.

10.25 Agreement Version. This document incorporates the standard provisions for the City's Professional Services Agreement updated as of April 8, 2008.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed the day and year first above written.

CITY OF LAS VEGAS

By _____
Kathleen C. Rainey, Manager, Purchasing & Contracts

ATTEST

Beverly K. Bridges, CMC, City Clerk Date

APPROVED AS TO FORM

Robert J. Sylvain 8-14-09
Deputy City Attorney Date

CONSULTANT

By Richard D. Plecker
Richard D. Plecker, Vice President, MWH Americas, Inc.

LIST OF EXHIBITS

- EXHIBIT “ A ” SCOPE OF SERVICES**
- EXHIBIT “ B ” REQUIRED SUBMITTALS**
- EXHIBIT “ C ” PERFORMANCE SCHEDULE**
- EXHIBIT “ D ” FEE BREAKDOWN**
- EXHIBIT “ E ” ADDITIONAL COMPENSATION**
- EXHIBIT “ F ” KEY PERSONNEL LIST**
- EXHIBIT “ G ” DISCLOSURE OF OWNERSHIP/PRINCIPALS**

EXHIBIT "A"

SCOPE OF SERVICES

PROJECT DESCRIPTION

This exhibit describes the scope of work for the design of facilities designated in the following documents and defined herein as the PROJECT. The City of Las Vegas (CITY) completed an update to its Water Resource Centers Facility Plan in April 2008. The plan evaluated future demands, discharge requirements, and operational considerations at the Durango Hills Water Resource Center (DHWRC), the Bonanza Mojave Water Resource Center (BMWRC) and the reuse water facilities at the Water Pollution Control Facility (WPCF). The plan included recommendations for operational improvements at DHWRC and BMWRC. The Facility Plan recommendations have been considered by the CITY.

The DHWRC is a 10 mgd activated sludge water reclamation facility with headworks, equalization, activated sludge secondary treatment, shallow-bed continuous back wash filters and UV disinfection. This scope of work describes the services to be rendered by CONSULTANT for the design of Durango Hills Water Resource Center Process Upgrades and shall consist of the following scope:

- Update influent flow projections based on collection system master plan completed by MWH in September 2008.
- Evaluate influent and effluent TDS, the impact of treatment on TDS, and make recommendations regarding permit compliance issues.
- Evaluate current blower operation to determine if the addition of a blow-off would be a beneficial improvement. Design the blow-off if recommended.
- Design replacement of approximately 20 existing electric actuators (Rotork) located throughout the plant with more robust electric units or with a pneumatic-based system. Evaluate the two options including cost comparison. The actuators are associated with the aeration and return activated sludge (RAS) systems.
- Design replacement of the existing four (4) manual filter influent gates. Replacement gates shall incorporate automatic actuators.
- Design replacement of existing Auger Monsters with step or fine perforated screens for a higher capture of rags and debris.
- Evaluate disinfection alternatives to consist of chlorination and an alternate UV system. The existing Trojan UV 4000 system is prone to the growth of algae within the channel because of the broad wavelength output of the medium pressure lamps. The result is periodic spikes of effluent coliform concentrations, unless the UV channel and surfaces therein are kept very clean. Replacement of the existing UV system with a low pressure, high-output style system (with monochromatic wavelength output) will be evaluated. This could consist of replacement in the existing channel, or in a new channel. An alternative hypochlorite disinfection system will be developed. Options to be evaluated for this alternative will consist of on-site hypochlorite generation or bulk storage. Disinfection options consist of a chlorine contact basin downstream of the UV or replacement of the method of disinfection in its entirety. Design the recommended alternative.

The tasks and subtasks included in the CONSULTANT's Scope of Work are described below. The major tasks are:

- | | |
|---------|----------------------------------------|
| Task 1 | Concept Development |
| Task 2 | Preliminary Design |
| Task 3 | Design Development |
| Task 4 | Detailed Design Development |
| Task 5 | Construction Document Development |
| Task 6 | Opinions of Probable Construction Cost |
| Task 7 | Quality Control |
| Task 8 | Regulatory Approval and Permitting |
| Task 9 | Bidding Assistance |
| Task 10 | Services During Construction |

Task 11 Services Post Construction

Task 12 Project Management and Coordination

Task 13 Subconsultant Services

The anticipated work products are listed following each subtask description, where applicable. Work products consist of formal deliverables such as Technical Memoranda (TMs), drawings, specifications and reports to be submitted for review by the CITY; as well as interim memoranda, data, and calculations developed for informal review by CITY staff and/or transfer of information to other tasks. TMs will be submitted in draft form (5 paper copies and an electronic copy [pdf format]) for review by CITY staff. Other submittals will be as described herein. A review period of 2 weeks by the CITY is assumed for each submittal. The CITY will collate and validate all comments from reviewers prior to issuance to CONSULTANT. Comments will be incorporated into the final document(s). CITY approval of documents will be issued in writing.

BASIS OF DESIGN SCOPE AND FEE DEVELOPMENT

The following Scope of Work forms the primary basis of anticipated work effort. Key assumptions were made in the compilation of this scope of work and the estimation of the level of effort, and are summarized within the main body, and in the Master List of Assumptions appended to the Scope of Work.

SCOPE OF WORK

The PROJECT work will be carried out using a phased design delivery approach. The phases, as described below, will be carried out sequentially. Each phase will consist of a specific list of work products and deliverables, which are identified in the individual sections. Design review workshops will be conducted with the CITY's personnel and key individuals from the CONSULTANT PROJECT team; the design review workshops will be conducted at critical design milestones.

Summary of Project Assumptions

The following assumptions are represented within this Scope of Work.

1. Chlorination Disinfection Design Alternative – As defined in Task 1.6, up to three alternate forms of disinfection will be evaluated for implementation: low pressure-high output (LPHO) ultraviolet (UV) disinfection, chlorination using purchased sodium hypochlorite, and chlorination using onsite sodium hypochlorite generation. The Project design level of effort and anticipated capital cost will vary depending on which alternative is selected under Task 1. Accordingly, this Scope of Work, Schedule, and Fee Estimate assume design and implementation of the UV disinfection alternative. Selection and implementation of one of the chlorination options will require authorization of supplemental services, representing the additional level of effort for the chlorination alternatives. For the purposes of budgeting, a supplemental fee allowance has been allocated.
2. I&C Integration – The CITY has historically utilized the services of a third-party Instrumentation and Controls (I&C) Integrator to coordinate and support design and construction activities for the CITY SCADA system. The CITY is currently engaged in pre-selection of firms to provide these services. It is anticipated that the I&C Integrator will be retained as a Subconsultant to CONSULTANT. The specific services and fees of the I&C Integrator will be determined once CITY pre-selection has concluded. For the purposes of budgeting these activities, a supplemental fee allowance has been allocated, but neither these services nor the fee are included in this proposal.
3. City of Las Vegas specifications will be used as the basis for the Division 0 specifications. CONSULTANT master specifications will be used as the basis for all other technical specifications and Division 1 documents.
4. The contract documents will be developed in two bid packages. One for maintenance items (the electrical actuators and aeration blower modifications) and the other for the headworks and disinfection modifications.
5. The design (conceptual design through contractor bid award) work on this PROJECT will last 12 months from authorization to proceed. The construction period on this PROJECT is expected to last 18 months from award of contract to the successful bidder.
6. Landscaping – Landscaping services are not required, since work is anticipated to be within the existing PROJECT site boundaries.
7. CONSULTANT's design delivery process will be employed including on-line CITY reviews. With the exception of the final review, the PROJECT team will not stop during formal reviews of submittals.
8. The design will be based on the federal, state, and local codes and standards in effect on the effective date of the authorization to proceed. Any changes in these codes may necessitate a change in scope.
9. No equipment pre-purchase or pre-negotiation will be required.
10. No additive or deductive alternates will be included on the bid form and contract documents.
11. **Attachments A-1 and A-2** define the CITY's requirements for I&C and Electrical contract documents.

12. **Attachment A-3** lists the anticipated Contract Documents.

13. The drawings will follow CONSULTANT CAE/CAD standards. MicroStation will be used to develop the drawings.

Task 1: Concept Development

Subtask 1.1 - Compile, Organize, and Summarize Existing Documents and Data

In conjunction with CITY staff, the CONSULTANT will identify pertinent documents and data that provide information required for the PROJECT. These documents will consist of record drawings; up to date P&ID drawings for process, field and I&C equipment, and control system architecture block diagram; geotechnical reports; site information; reports related to CITY sewerage system, system flow records for the DHWRC; design criteria and standards; design calculations; O&M records for treatment, odor control and instrumentation and control system (including PLCs hardware and software, I/O lists, control strategies, HMI hardware and software, copies of HMI screens, etc.); operation policies and procedures; cost data; and other relevant work products. Existing available information will be provided by the CITY, in electronic format to the extent possible.

Work Product: List of existing documents and information, organized by subject area.

Subtask 1.2: Future Flow Projections.

Update the influent flow projections in the April 2008 WRC Master Plan based on the Collection System Master Plan completed by MWH in September 2008. Review and update any of the 2008 recommendations that are impacted by revisions to the projected flows. Recommendations that require additional WRC facility modifications shall be addressed as and implemented as Additional Services.

Work Product: Draft and Final Technical Memoranda

Subtask 1.3: Screening System Replacement

Evaluate alternatives to replace the existing Auger Monsters with step screens or perforated fine screens. Alternatives will be evaluated for 1) constructability within the established space of the screenings building, 2) impact on hydraulic profile, 3) capital cost, and 4) expected performance and screenings characteristics. Alternative screen system manufacturers will be identified for installation lists and references. Three installations for each alternative screen system will be contacted and asked about performance and maintenance for their installed systems. It is assumed that four alternative screen systems will be evaluated.

The evaluation will also consist of assessment of modifications to the screenings handling resulting from increased quantities of screenings and recommendations for the nominal clear opening of the screens.

Work Product: Draft and Final Technical Memoranda

Subtask 1.4: Replace Existing Actuators.

Evaluate the replacement of approximately 20 existing electric actuators (Rotork) located throughout the plant. The actuators are associated with the aeration and return activated sludge (RAS) systems. Characterize the problem and identify the cause. Evaluate replacement with new electric units or with a pneumatic-based system. The two options will be evaluated on a cost basis including capital and maintenance costs.

Work Product: Draft and Final Technical Memoranda

Subtask 1.5: Aeration System Blow-off.

Evaluate current blower operation to determine if the addition of a blow-off would be a beneficial improvement. Develop and approach and estimate capital costs.

Work Product: Draft and Final Technical Memoranda

Subtask 1.6: Disinfection.

Evaluate alternatives to the existing medium pressure UV disinfection system. The alternatives to be evaluated are an alternate type of UV system and chlorination.

Replacement of the existing UV system with low pressure, high-output style system (with monochromatic wavelength output) will be evaluated. This could consist of installing the alternative UV system in the existing channel, or in a new channel or structure.

Two chlorination disinfection alternatives will be developed. Chlorine contact basin options consist of supplemental disinfection downstream of the existing UV system or replacement of the UV method of disinfection in its entirety with a complete chlorination disinfection system and contact tank. Consideration will not be given to using a portion of the LVWWD reuse storage basin that is located at the DRWRC site. Alternatives for hypochlorite/chlorine generation and handling to be evaluated for this alternative will consist of on-site hypochlorite generation, truck delivery of sodium hypochlorite with on-site storage, and on-site gas generation (similar to on-site hypochlorite generation).

Work Product: Draft and Final Technical Memoranda

Subtask 1.7: TDS Evaluation.

Evaluate recent and historical influent and effluent TDS, assess the impact of existing treatment on TDS, and make recommendation regarding permit compliance. The evaluation will consider any historical increase in influent TDS concentration. Assistance with negotiations with regulators and reclaimed water contract negotiations will be included. This task will also consider TDS at the Bonanza-Mojave WRC.

Work Product: Draft and Final Technical Memoranda

Subtask 1.8: Filter Influent Gate Replacement.

Evaluate alternatives to replace the four existing aluminum filter influent gates. The evaluation will consider corrosion resistance and modification of channels to allow installation. Replacement gates will utilize electric or pneumatic actuators.

Work Product: Draft and Final Technical Memoranda

Subtask 1.9: Concept Development Workshop

CONSULTANT will conduct a half-day workshop with the CITY's personnel to review the work products from subtasks 1.1 through 1.6 as defined above. The workshop will be held in CITY's offices. Final notes from the workshop and the work products as defined above will be assembled in the Concept Development report and submitted to the CITY.

Work Product: Summary workshop notes.

Task 2: Preliminary Design

The primary purpose of PROJECT Preliminary Design is to firmly establish the PROJECT design criteria. Work will culminate in the preparation of the Project Preliminary Design Report. The report will contain the following information:

Subtask 2.1: Civil and Site Development

Design development work will consist of the following activities.

Confirm adequacy of topographical and boundary mapping. Evaluate legal, Ownership, permitting and zoning constraints. Identify environmentally sensitive areas will consist of wetlands, flood plains, and known hazardous waste areas.

Develop plant site layouts. This will consist of the following activities: (1) determine structure size, location, and orientation; (2) layout roadways/truck access corridors and define maneuvering requirements (design vehicle); (3) size and locate parking lots for employees and visitors to the facility; (4) determine emergency vehicle access requirements. (4) evaluate flood plain impacts and constraints; (5) locate storm water management facilities. (6) locate utility and piping corridors (horizontal and vertical).

Prepare cover sheet and vicinity/location map; list of drawings; design criteria sheet; pipe materials schedule; and abbreviations and symbols.

Coordinate with surveyors; define surveyors' scope of work; Field and aerial survey will be conducted for the plant site to provide design information for the PROJECT.

Coordinate with geotechnical engineer on boring locations; record boring locations on site drawings. The geotechnical investigation and report will be sufficient to complete design of the structures.

Develop preliminary erosion control plan for the PROJECT. Determine if erosion control ponds are required; locate ponds on site plan drawings as required. Prepare preliminary storm water calculations suitable for submission to local site permitting authorities. Develop preliminary storm water control concepts (swales, curb, and gutter). Meet with local storm water and erosion and sediment control agency to determine permitting requirements for site plans, and impact of requirements on preparation of contract documents. Document findings.

Set preliminary finished floor levels for new structures. Establish preliminary finished grades; overall major surfaces, road profiles, etc. Iterate preliminary surfaces and structures to optimize earthwork if necessary.

Review concepts and draft work products with and seek approval from CONSULTANTCONSULTANT quality control reviewer.

Subtask 2.2: Architectural

Not applicable.

Subtask 2.3: Structural

Design development work for structural will consist of the following activities.

Perform a structural criteria and ode review of existing facilities that require retrofit/rehabilitation to identify areas where the facilities do not meet current codes.

Develop preliminary structural demolition plans.

Coordinate with architectural discipline on the selection of building concepts. Consult with lead process engineer on building/structure layouts.

Develop building foundation and structure concepts based on schematic building layouts.

Review concepts and draft work products with and seek approval from CONSULTANTCONSULTANT quality control reviewer.

Subtask 2.4: Geotechnical

Design development work for geotechnical will consist of the following:

Determine site specific geotechnical subsurface conditions for each facility and structure.

Develop specific foundation requirements.

Verify constructability (shoring and bracing requirements, dewatering issues) and potential affects upon construction and preliminary construction means and methods recommendations.

Using existing geotechnical data and results of investigations, prepare foundation and corrosion control recommendations.

Review concepts and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 2.5: Process

Design development work for process will consist of the following:

Determine size/capacity of unit treatment processes and ancillary systems.

Review capacity of existing processes and equipment to remain in service. Assign capacity to existing processes.

Prepare process flow diagrams (PFDs).

Prepare preliminary solids balance.

Develop process narratives.

Review concepts and draft work products with and seek approval from CONSULTANT quality control reviewer.

Prepare preliminary hydraulic profile.

Subtask 2.6: Mechanical

Design development for mechanical will consist of the following:

Mechanical criteria and code requirements; preliminary process building/structure plans and sections.

Select and size major process equipment including pumps. Prepare sizing calculations and obtain review. Establish level of redundancy required for process equipment.

Prepare equipment list with sizing for major equipment. Coordinate with the CITY on preferences of equipment manufacturer and processes.

Prepare preliminary equipment arrangements.

Review capacity and condition of existing equipment to remain in service where appropriate. Assign capacity to existing equipment. List new equipment to be installed as applicable.

Review concepts and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 2.7: HVAC/Plumbing

Not applicable.

Subtask 2.8: Instrumentation and Control Systems (I&CS)

Design development work for the instrumentation and control will consist of the following activities.

Coordinate with the process engineer(s) to prepare a process flow drawing (PFD) for each treatment process. Information to be included on each PFD includes at a minimum: Process configuration, flow streams, valve and gate locations (manual and powered), chemical additions points/types, process equipment location/type including packaged control panels and adjustable-speed drives, flow meters and other process control devices.

Develop equipment/instrument tag numbering, naming, and abbreviation conventions.

Work with Process Engineer to prepare written operational description of each major process.

Develop overall control philosophy including local control approach, control system, level of automation, supervisory control and data acquisition (SCADA) and the human machine interface (HMI) philosophy. SCADA block diagram and control panel/PLC locations. Existing SCADA block diagram and P&ID will be used as a background for the block diagram and I&C modification.

Review concepts and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 2.9: Electrical

Design development work for electrical will consist of the following.

Prepare preliminary overall one-line diagram for proposed facilities.

Prepare preliminary load calculations.

Size electrical rooms.

Determine number of electrical feeds to be provided to facility. Coordinate with local power utility to determine locations of power feeds, voltage, billing details (peak usage rates), requirements for reduced voltage starters, substation requirements

Determine redundancy requirements for power supplies and power distribution.

Establish preferred voltages for power distribution and utilization equipment.

Coordinate with other disciplines (architectural, mechanical) to resolve code compliance issues specific to these disciplines. Develop preliminary schedule of hazardous and corrosive locations.

Review concepts and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 2.10: Preliminary Design Workshop

CONSULTANT will conduct a half-day workshop with the CITY's personnel to review the work products from the subtasks defined above. The workshop will be held in CITY's offices. Final notes from the workshop and the work products as defined above will be assembled in the Preliminary Design Report and submitted to the CITY.

Work Product: Draft discipline work products, summary workshop notes.

Subtask 2.11: Preliminary Design Report

The purpose of this task is to summarize the recommended Concept Development alternatives, and further develop the design concepts in the context of CITY and jurisdictional agency and code requirements. Some preliminary design drawings will be started, consisting of some General, Civil, and Process and Instrumentation drawings. The Preliminary Design Report (PDR) will be a compilation of memoranda produced as part of the tasks summarized above.

Work Product: Draft and Final Preliminary Design Reports.

Task 3: Design Development

The purpose of this task is to use the data and guidelines developed in the Project PDR, and further develop the selected design concepts, and develop the PROJECT design to achieve a true "design freeze" at the conclusion of Design Development. The end products from this task will consist of approximately 50-60% progress drawings which will provide sufficient information for CITY and agency review and design team coordination and review. CONSULTANT will conduct one interactive workshop with the CITY's personnel prior to the conclusion of this task. Specific work activities and deliverables from this task are as identified below.

Subtask 3.1: Civil and Site Development

Structures, road, and major site element horizontal locations are finalized. Structure floor/control levels and finished grades are finalized.

Define demolition requirements and limits. Define CONTRACTOR staging, storage, access, and off-site access corridors.

Prepare site grading drawings.

Download survey data to create site-drawing files for final design.

Set final building and structure elevations.

Develop yard piping and plant drain layouts. Identify corridors for smaller piping and other utilities.

Show storm water control concepts (swales, curb, and gutter) on the design development drawings.

Finalize traffic flow, parking, and lay out road access to buildings and structures. Coordinate handicap requirements with architectural discipline and local site plan regulations.

Prepare first draft of technical specifications.

Review detailed design development and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 3.2: Architectural

Not applicable.

Subtask 3.3: Structural

Coordinate with geotechnical engineer to establish foundation design criteria for proposed facilities. Review geotechnical report and discuss foundation design approach with geotechnical engineer and senior structural reviewer

Document structural design concept for each building (room by room) and structure. Finalize materials of construction (cast-in-place versus precast concrete, roof structures, etc).

Preliminary framing plan for buildings and other structures.

Prepare 3-D electronic models or preliminary floor plan for major structures.

Prepare first draft of technical specifications.

Review detailed design development and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 3.4: Process

Final major equipment sizing calculations.

Coordinate with I&C on completion of P&IDs.

Coordinate with I&C on development of process control narratives.

Review detailed design development and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 3.5: Mechanical

Calculate the hydraulic profile for all-major gravity process pipelines and hydraulic structures. Establish maximum and minimum water surface elevations for process tanks.

Prepare 3-D electronic models or building and structure layouts (plans and major section(s)).

Assemble catalog cuts for major process equipment. Complete equipment data sheets or equipment list on major equipment items.

Coordinate with I&C in the finalization of P&IDs

Final ancillary equipment sizing and line sizing calculations.

Final equipment selection (type, size, weight, arrangement).

Select piping materials.

Prepare first draft of technical specifications.

Review detailed design development and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 3.6: HVAC/Plumbing

Not applicable.

Subtask 3.7: Instrumentation and Control

Finalize hand annotated internal reference P&IDs for internal coordination use.

Prepare preliminary I/O count. Size and locate I/O locations for distributed control systems (DCS). Coordinate I/O rack room sizing with electrical and architectural disciplines.

Summarize I&C system design philosophy for each major process in a process control narrative. Include a description of the field elements to be used for each application and preliminary set points for major I&C elements. Update/finalize control system block diagram. Finalize typical control diagrams/loop diagrams for each type of control scheme to be used.

Coordinate with HVAC engineer regarding control system requirements.

Define control interfaces for package systems with local controls, including adjustable frequency drives.

Prepare first draft of technical specifications.

Review detailed design development and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 3.8: Electrical

Determine number of motor control centers (MCCs) to be provided and location of MCCs, and equipment to be powered out of each MCC. Prepare preliminary one-line diagrams for proposed facilities. Coordinate with lead process engineers to size equipment motors.

Prepare detailed electrical load calculations.

Size electrical rooms and prepare a preliminary layout of the major electrical equipment located in each electrical room. Determine equipment and instruments requiring uninterruptable power supplies (UPS) and locations of UPS equipment. Coordinate with I&C discipline to determine space requirements and locations for control equipment. Locate major I/O termination panels, TJB's, and control panels.

Define/document requirements and concepts for special systems: Telephone (including incoming service location, scope of supply, etc.), Data highway (control system), Data highway (LAN, office automation) and Fire alarm system.

Identify rights-of-way and routing methods for electrical conduit and tray. Lay out duct bank system (major runs/manholes). Locate incoming power service and primary power transformers. Coordinate with civil yard piping. Locate manholes and hand holes.

Provide a new self-contained generator and integral fuel storage system for backup power for the new facilities, systems and components.

Prepare preliminary site lighting layout.

Define hazardous locations (NFPA 820) and document. Define corrosive locations and document.

Prepare first draft of technical specifications including performance specifications for interior lighting design by the CONTRACTOR.

Review design development and draft work products with and seek approval from CONSULTANT quality control reviewer.

Subtask 3.9: Design Development Workshop

CONSULTANT will conduct a half-day design workshop to review the work products with the CITY's staff. The workshop will be held in CITY's WPCF conference room. Final workshop notes, documenting key decisions and the work products produced through subtasks above will be submitted to the CITY.

Work Product: Draft discipline work products, summary workshop notes and Design Development drawings and specifications.

Task 4: Detailed Design Development

The purpose of this task is to utilize the decisions of the PROJECT that were made through Design Development, and finalize the calculations and progress design to approximately 90 percent completion. Structures, equipment, major plant piping, process, site plan have been finalized to allow detailing. Drawings and other materials that may be required exhibits for environmental permit applications will be available at the conclusion of this detailed design. Specific activities, and work products from this phase are described in the following subtasks:

Subtask 4.1: Civil and Site Development

Finalize site drawings

Finalize road and piping plans, profiles and details

Prepare miscellaneous civil drawings, details and standard details

Finalize technical specifications

Subtask 4.2: Architectural

Not applicable.

Subtask 4.3: Structural

Finalize plans and sections

Prepare details and standard details

Finalize calculations

Finalize technical specifications

Subtask 4.4: Process

Finalize calculations

Subtask 4.5: Mechanical

Finalize plans and sections

Prepare details and standard details

Prepare final equipment schedules

Finalize technical specifications

Subtask 4.6: HVAC/Plumbing

Not applicable.

Subtask 4.7: Instrumentation and Control

Finalize P&ID's

Prepare miscellaneous instrumentation drawings , details and standard details

Prepare final instrument and I/O lists

Finalize technical specifications

Refer to **Attachment A-1** for specific requirements for I&C contract documents

Subtask 4.8: Electrical

Finalize project electrical drawings

Finalize area electrical drawings

Develop miscellaneous electrical drawings, details and standard details

Prepare final electrical schedules

Finalize technical specifications

Refer to **Attachment A-1** for specific requirements for Electrical contract documents

Subtask 4.9: Detailed Design Development Document Completion

Finalize specification front-end documents, including General Conditions, General Requirements, bidding documents, bonds, and Instruction to Bidders. CITY input is required at this point to determine construction contract requirements and insurance requirements.

Prepare detailed design development drawings.

Prepare final technical specifications.

Prepare final calculations.

Complete final checking and coordination review.

Subtask 4.10: Detailed Design Development Workshop

CONSULTANT will conduct one half-day design workshop to review the work products with the CITY's staff. The workshop will be held in CITY's WPCF conference room. Final workshop notes, documenting key decisions and the work products produced through subtasks above will be submitted to the CITY.

Work Product: Draft discipline work products, summary workshop notes and Detailed Design Development drawings and specifications.

Task 5: Construction Document Development

The purpose of this task is to develop the final contract drawings, specifications, and schedules for competitive bidding. Key activities will include:

Subtask 5.1: Final Review Workshop

CONSULTANT will conduct a half-day workshop to conduct a final review of the work products with the CITY's personnel and other key staff. The CITY will prepare one set of collated comments and submit them to CONSULTANT. The workshop will be held in CITY's WPCF conference room. This workshop is critical to reach closure on remaining design issues with the CITY.

Subtask 5.2: Final Contract Document Completion

CONSULTANT will modify the contract documents to reflect agreed upon final review comments from the CITY, applicable regulatory agencies and CONSULTANT's quality control review team. The final documents will then be submitted to the CITY.

Prepare final construction drawings (using the same disciplines as shown in Task 4).

Prepare final technical specifications.

Work Products: Final workshop notes, documenting the key decisions and responses to the CITY's comments will be submitted to the CITY. One set of interim and one set of final contract documents, opinion of probable cost.

Task 6: Opinions of Probable Construction Cost

The Opinions of Probable Construction Cost (OPCC) for this Scope of Work will be prepared in accordance with the cost estimate classes defined by the Association for the Advancement of Cost Engineering. Estimates will be developed according to the following:

- Task 2 - Preliminary Design – “Class 4” level estimate
- Task 3 - Design Development – “Class 3” level estimate
- Task 4 – Detailed Design Development – “Class 2” level estimate

The OPCCs associated with each deliverable for the above Tasks will be submitted to the CITY for review within two weeks following the submission of the associated deliverables.

The OPCC developed for the Detailed Design Development (approx. 90% project completion) will be the CONSULTANT's final opinion of probable construction cost prior to PROJECT Bid Advertisement.

The CITY acknowledges that CONSULTANT has no control over costs of labor, materials, competitive bidding environments and procedures, unidentified field conditions, financial and/or market conditions, or other factors likely to affect the OPCC of this PROJECT, of which are and will unavoidably remain in a state of change, in light of the high volatility of the market attributable to Acts of God and other market events beyond the control of the parties. CITY further acknowledges that this is a “snapshot in time” and that the reliability of this OPCC will inherently degrade over time. CITY agrees that CONSULTANT cannot and does not make any warranty, promise, guarantee, or representation, either express or implied, that proposals, bids, project construction costs, or cost of operation or maintenance will not vary substantially from CONSULTANT's good faith OPCC.

Task 7: Quality Control

The objective of this task is to develop and implement procedures to obtain quality deliverables. The majority of the quality control review and approval will occur prior to the finalization of the work products from each design development phase. Each of the subtasks below is performed following development of the technical deliverables. The relevant review points are listed under each of the subtasks.

Subtask 7.1: Technical Reviews

A Technical Review Committee (TRC) will be established by the CONSULTANT consisting of three experienced engineers familiar with similar projects. A TRC Meeting will be held at the end of preliminary design development, Design Development, and prior to completion of the Construction Document Development. The purpose of these reviews is to confirm that the design will accomplish the PROJECT objectives.

Subtask 7.2: Intradiscipline Review

Detailed intradiscipline review will be conducted at the completion of Detailed Design Development and prior to the completion of Construction Document Development. These reviews will be conducted for each discipline by a person not involved in preparing the plans or specifications for this PROJECT.

Subtask 7.3: Interdiscipline Review

Interdiscipline checking will be conducted at completion of Design Development and prior to the completion of Construction Document Development for agreement and coordination among the design disciplines and the specifications.

Subtask 7.4: Constructability Reviews

Constructability reviews will be conducted at the completion of Preliminary Design and prior to the completion of Detailed Design Development.

Subtask 7.5: Operability Reviews

Operability reviews will be conducted simultaneously with the Interdiscipline reviews for consistency with the CITY's operations practices.

Subtask 7.6: Review of Engineer's Opinions of Probable Construction Cost

The Engineer's Opinions of Probable Construction Cost will be reviewed by the Project Engineers and Project Manager to confirm that the cost estimating team understood the work and conditions associated with the portions of the PROJECT. The cost estimates will be reviewed at the end of Preliminary Design and after Detailed Design Development.

Subtask 7.7: Final Back-Checking

The Construction Document proof set will be checked to confirm that internal and external comments have been appropriately addressed and incorporated.

Task 8: Regulatory Approval and Permitting

Subtask 8.1: Prepare Permit Documents

The CONSULTANT will assist the CITY in the preparation of documents for submittal to the following permitting agency(ies). Documents, in the number requested by each agency, will be prepared for submission to:

Nevada Division of Environmental Protection

Work Product: Permitting agency documents

Subtask 8.2: Permitting Agency Meetings

The CONSULTANT will attend with the CITY two (2) meetings with each agency listed in Subtask 7.1 to answer questions and provide information on the facilities.

Work Products: Project Synopsis, drawing sets and architectural renderings for permit agencies, meetings and meeting notes.

Task 9: Assist in Bidding

The objective of this task is to provide assistance to CITY during bidding of the PROJECT.

Subtask 9.1: Prepare Bid Documents

CONSULTANT will assist the CITY in assembling the Bid Documents. CITY will solicit bid and distribute documents to bidders. CITY will maintain a list of prospective bidders receiving the Bid Documents.

Work Product: *Provide one PDF copy and one Mylar copy of contract documents for CITY use in bid solicitation*

Subtask 9.2: Attend Pre-bid Conference

CONSULTANT will assist the CITY in arranging and conducting one pre-bid conference to be held with interested bidders. CONSULTANT shall assist the CITY in developing the agenda and content of the pre-bid conference.

Subtask 9.3: Respond to Bidders Questions

Along with the CITY, CONSULTANT will develop and implement procedures for receiving and answering bidders' questions and requests for additional information. CONSULTANT shall provide technical interpretation of the contract bid documents and will prepare proposed responses to bidders' questions and requests and shall provide technical interpretation of the contract bid documents. The bidder question period will terminate no later than two (2) weeks prior to the bid date.

Work Product: Responses to up to 15 bidders' questions (assuming an average 4 man-hours per response); Log of significant bidders questions.

Subtask 9.4: Prepare Addenda

CONSULTANT shall assist the CITY in preparing Addenda to the Bid Documents. CITY shall distribute Addenda to the bidders. All Addenda shall be approved by the CITY. The CITY shall pay for the expenses of all Addenda.

Work Product: A total of two addenda to be produced, one PDF copy, and one hard copy.

Subtask 9.5: Attend Bid Opening

One member of the CONSULTANT's staff will attend the bid opening.

Work Product: Notes of Bid Opening

Subtask 9.6: Review Bids

CONSULTANT shall assist the CITY in opening of bids. CONSULTANT shall review up to three (3) bids and evaluate them for responsiveness and bid price. CONSULTANT shall prepare a report of its review and evaluation and consist of recommendations for award of the contract for construction. The CITY shall make the final decision on the award of the contract for construction and the acceptance or rejection of bids. CONSULTANT will provide technical (but not legal) advice in bid protest situations.

Work Product: Bid evaluation letter

Task 10: Services During Construction

CONSULTANT will provide services to assist the CITY in administering the contract for construction, monitor the performance of the CONTRACTOR, verify that the CONTRACTOR's work is in substantial accord with the contract documents, and assist the CITY in responding to events that occur during the construction. These services are based upon the understanding that the CITY will contract directly with the CONTRACTOR and will be actively involved in the construction process to make decisions, provide approvals, and perform other actions necessary for the completion of the construction.

Services are also based upon the CITY executing a contract for construction with one CONTRACTOR that is consistent with the CONSULTANT's Agreement, these services, and which provides the requisite authority for CONSULTANT to fulfill its responsibilities.

CONSULTANT's services are based upon the schedule or duration of construction anticipated at the time that these services are agreed. Deviations from the anticipated schedule or duration of construction will materially affect the scope and CONSULTANT's compensation, and may require an adjustment to CONSULTANT's compensation.

CONSULTANT will not be responsible for the means, methods, techniques, sequences or procedures of the CONTRACTOR, nor shall CONSULTANT be responsible for the CONTRACTOR's failure to perform in accordance with the contract documents.

The subtasks presented in the following paragraphs reflect the nature and extent of the engineering services that could reasonably be contemplated at this stage of PROJECT development.

Subtask 10.1: Conformed Documents

Once the bids are received, the CITY and CONSULTANT will jointly re-issue the design drawings including those revised during bidding by Addendum. CONSULTANT will produce PDFs of conformed design drawings on CD, and will deliver them to the CITY. CONSULTANT will also supply an electronic copy of conformed specifications on CD to the CITY. The conformed documents will be provided for the convenience of the CITY and contractor, and do not supersede the contract documents (bidding documents and addenda).

Work Product: Conformed documents

Subtask 10.2: Review Shop Drawings, Samples and Submittals

CONSULTANT will review shop drawings as submitted by the CONTRACTOR to the CITY. Shop drawings, defined as shop and working drawings of fabricated and manufactured equipment, and general and detailed information on materials, equipment and products to be provided for the work, and will be submitted by the CONTRACTOR in accordance with the Contract Specifications. This scope of work assumes 75 shop drawings (initial plus re-submittals). CONSULTANT will coordinate with the design team for the reviews of the CONTRACTOR's shop drawings, samples, and other submittals. CITY will log and track shop drawings, samples and submittals.

Scope of Review: CONSULTANT's scope shall be based upon the scope of work in the contract for construction and shall consist of for a maximum of two submissions by the CONTRACTOR for each shop drawing, sample or submission. Should there be significant increases in the number of additional reviews required by CONSULTANT and design team, CONSULTANT shall be entitled to additional compensation. Such review shall not relieve the CONTRACTOR from its responsibility for performance in accordance with the contract for construction, nor is such review a guarantee that the work covered by the shop drawings, samples and submittals is free of errors, inconsistencies or omissions.

- **Review Shop Drawings Submittals:** The shop drawings will be reviewed for substantial conformity with the intent of the contract Drawings and Special Provisions. Reviews will be performed and signed by the engineer that designed the PROJECT or their designee.
- **Shop Drawing Submittal Processing:** CONSULTANT will designate a PROJECT coordinator who will receive copies of each submittal to be marked or appended with review comments from the CITY. Reviewed copies of shop drawings will be returned to the CITY no later than **14** calendar days following receipt by the PROJECT coordinator. CONSULTANT will keep a copy of shop drawings reviewed by CONSULTANT for documentation purpose. Correspondence with the CONTRACTOR will be through the CITY. Comments on shop drawings can be either markups or in Memo format appended. CONSULTANT will also receive a file copy of shop drawings reviewed by the CITY.
- The estimated level of effort for this task is based on an assumed review effort required for the shop drawing reviews. For the purposes of budgeting, it is assumed that up to 5 man-hours will be required to review and respond to each shop drawing. Additional requests or levels of effort beyond these assumptions may be provided as Additional Services.

Work Product: Shop drawing reviews

Subtask 10.3: Review Manufacturers' Technical Manuals

CONSULTANT will review manufacturers' Technical Manuals as submitted by the CONTRACTOR (technical operations literature and maintenance information) corresponding to CONSULTANT's detailed design responsibility, to verify that the information required in the specifications has been included. As with shop drawings, CONSULTANT PROJECT coordinator will receive the manufacturers' Technical Manuals from the CITY and CONSULTANT will provide review comments by way of returned forms. This scope of work assumes 5 Technical Manual submittals (initial plus re-submittals). CONSULTANT will coordinate with the design team for the reviews of the CONTRACTOR's Technical Manual submittals. CITY will log and track Technical Manual submittals.

Scope of Review: CONSULTANT's scope shall be based upon the scope of work in the contract for construction and shall consist of for a maximum of two submissions by the CONTRACTOR for each Technical Manual. Should there be significant increases in the number of additional reviews required by CONSULTANT and design team, CONSULTANT shall be entitled to additional compensation. Such review shall not relieve the CONTRACTOR from its responsibility for performance in accordance with the contract for construction, nor is such review a guarantee that the work covered by the Technical Manuals is free of errors, inconsistencies or omissions.

- **Technical Manual Submittals:** The Technical Manual will be reviewed for substantial conformity with the intent of the contract Drawings and Special Provisions. Reviews will be performed and signed by the engineer that designed the PROJECT or their designee.
- **Technical Manual Submittal Processing:** CONSULTANT will designate a PROJECT coordinator who will receive copies of each submittal to be marked or appended with review comments from the CITY. Reviewed copies of Technical Manuals will be returned to the CITY no later than 20 calendar days following receipt by the PROJECT coordinator. CONSULTANT will keep a copy of Technical Manuals reviewed by CONSULTANT for documentation purpose. Correspondence with the CONTRACTOR will be through the CITY. Comments on Technical Manuals can be either markups or in Memo format appended. CONSULTANT will also receive a file copy of Technical Manuals reviewed by the CITY.
- The estimated level of effort for this task is based on an assumed review effort required for Technical Manual reviews. For the purposes of budgeting, it is assumed that up to 16 man-hours will be required to review and respond to each Technical Manual. Additional requests or levels of effort beyond these assumptions may be provided as Additional Services.

Work Product: Manufacturers' Technical Manual reviews

Subtask 10.4: Requests for Information

CONSULTANT will interpret Contract Documents in response to requests for information (RFIs) received from the CONTRACTOR via the CITY or from CITY staff. RFIs by the CONTRACTOR will be relayed to CONSULTANT via CONSULTANT's PROJECT coordinator and will consist of written requests only. Written responses will be prepared in a Memo format including elementary sketches as required to illustrate design details and intent, and will be through the CITY. This scope of work assumes 75 written RFI responses.

The estimated level of effort for this task is based on an assumed effort required. For the purposes of budgeting, it is assumed that up to 4 man-hours will be required to review and respond to each RFI. Additional requests or levels of effort beyond these assumptions may be provided as Additional Services.

Work Product: Responses to Requests for Information

Subtask 10.5: Site Coordination

Pre-Construction Conference: CONSULTANT shall attend one pre-construction conference with the CONTRACTOR to review the PROJECT communication, coordination and other procedures and discuss the CONTRACTOR's general work plan and requirements for the PROJECT. The Construction Manager will take notes or otherwise record the results of this conference. The estimated level of effort for this task is based on an assumed effort required for one (1) design Pre-Construction Conference. For the purposes of budgeting, it is assumed that up to 24 man-hours will be required, and up to two (2) site visits from the various design disciplines. Additional requests or levels of effort beyond these assumptions may be provided as Additional Services.

Task 11: Services Post Construction

Once the construction is complete, CONSULTANT will assist the CITY in orderly closure of the construction PROJECT and commencement of plant operations. The subtasks presented in the following paragraphs reflect the nature and extent of the engineering services that could reasonably be contemplated at this stage of PROJECT development.

Subtask 11.1: Record Drawings

The CONSULTANT will revise design drawings based upon record markups of the plans and specifications, including minor revisions to the work, addenda and change order documents, maintained by the CONTRACTOR and markups maintained by the CITY to record changes made during construction. CONTRACTOR's marked-up drawings will be checked by the CITY and will be ready for drafting prior to revision of record drawings. This scope of work assumes accurate and complete, record markups from the CONTRACTOR and CITY and that an average of 2.5 hours per sheet will be required to document record conditions. Record drawings will be initiated upon receipt of As-Built drawings, and following Substantial Completion.

CONSULTANT will prepare one set of Mylar, with revision block completed (but otherwise unsigned), and one CD for the CITY. This scope of work assumes 78 sheets to be revised and typical degree of markups to be incorporated.

Work Product: Record Drawings

Task 12: Project Management and Coordination

This task will consist of PROJECT monitoring and administration, and attendance at regularly scheduled progress meetings with CITY staff. The scope of this task assumes an 12-month PROJECT design schedule, and a 18-month PROJECT bidding through construction schedule.

Subtask 12.1: Prepare Project Work Plan and Conduct Kickoff Meeting

The purpose of this task is to prepare the detailed PROJECT management plan that will be used during the execution of this PROJECT. Specific elements of the plan will include:

The work plan will consist of the PROJECT scope, schedule, and deliverables; identify team member roles, responsibilities, and lines of communication; and list the members of PROJECT team management and Technical Review Committee with addresses, telephone numbers, and email addresses. The CONSULTANT will conduct a PROJECT kickoff meeting with CITY staff to review the draft work plan. The final work plan will be distributed to team members following the kickoff meeting. Updates to the schedule and any revisions to the work plan will be provided to team members during the course of the PROJECT.

1. Project Instructions: Define CITY and CONSULTANT team organization, communication, cost control procedures, document control, health and safety considerations, change management and other PROJECT management requirements.
2. CAD/CAE Standards: Define CAD/CAE software standards, graphic standards, file naming conventions and standards, revision/iteration control and other graphic standards.
3. Quality Management Plan: CONSULTANT will use its standard continuous quality control process. The QMP will define the quality control process as customized for this PROJECT.
4. Project Health and Safety Plan: CONSULTANT will develop a health and safety plan to apply to CONSULTANT employees working on this PROJECT. It will address safety in the office and during site visits and reference requirements by the CITY.

Work Product: Project Work Plan, kickoff meeting agenda and notes.

Subtask 12.2: Project Monitoring, Administration, and Status Reporting

The CONSULTANT will establish internal PROJECT controls to monitor PROJECT status, budget, staffing, and schedule on an on-going basis. Budget and schedule status will be reviewed by the CONSULTANT weekly. The CONSULTANT will prepare monthly status reports within 5 working days after the close of the CONSULTANT's accounting month. The status reports will describe the work completed during the previous month, anticipated work for the following month, current budget and schedule status, and any PROJECT issues requiring discussion or resolution. This subtask also includes execution and administration of sub-consultant contracts.

Work Product: Budget and schedule updates, monthly status reports

Subtask 12.3: Invoicing

The CONSULTANT will prepare monthly invoices to the CITY using CONSULTANT's standard format. CONSULTANT will also use CITY Standard Payment Request Form.

Work Product: Monthly invoices

Subtask 12.4: Project Status Meetings

CONSULTANT will keep the CITY advised of PROJECT progress from planning through construction. The CONSULTANT will meet with CITY staff once every month to review PROJECT status and discuss PROJECT issues. Informal meeting notes will be prepared to document key information items or decisions made.

Work Product: Status meetings over the anticipated duration of the PROJECT are assumed. Meeting notes

Subtask 12.5: Review and Finalize Project File

Once the design is complete, the PROJECT files will be purged of irrelevant and extraneous material. Relevant information will be documented, filed and closed.

Work Product: File close out.

Task 13: Subconsultant Services

Subconsultants will be used for I&C integration, Survey, and Geotechnical services. Additional sub consultant services may be required per Exhibit B – Additional Services.

Subtask 13.1: I&C Integration Subconsultant

The CITY has historically utilized the services of a third-party Instrumentation and Controls (I&C) Integrator to coordinate and support design and construction activities for the CITY SCADA system. The CITY is currently engaged in pre-selection of firms to provide these services. It is anticipated that the I&C Integrator will be retained as a Subconsultant to CONSULTANT. The specific services and fees of the I&C Integrator will be determined once CITY pre-selection has concluded. For the purposes of budgeting these activities, an Additional Services fee allowance has been allocated, but neither these services nor the fee are included in the authorized services of this scope of work.

Subtask 13.2: Survey Subconsultant

Existing topographic survey information will be used for the design of the new and modified facilities. Additional field surveying will be conducted for the plant site to support design of recommended alternatives.

Subtask 13.3: Geotechnical Subconsultant

Geotechnical information and design recommendations will be developed to support design of recommended alternatives.

CITY PROVIDED SERVICES

1. CITY will provide to CONSULTANT data in CITY's possession relating to CONSULTANT's services on the Project. CONSULTANT will reasonably rely upon the accuracy, timeliness, and completeness of the information provided by the CITY.
2. CITY will make its facilities accessible to CONSULTANT as required for CONSULTANT's performance of its services and will provide labor and safety equipment as required by CONSULTANT for such access. CITY will perform, at no cost to CONSULTANT, such tests of equipment, machinery, pipelines, and other components of CITY's facilities as may be required in connection with CONSULTANT's services.
3. CITY will give prompt notice to CONSULTANT whenever CITY observes or becomes aware of any development that affects the scope or timing of CONSULTANT's services, or of any defect in the work of CONSULTANT or the CONTRACTOR.
4. CITY will respond to the Consultant's requests for information and document review in a timely manner so as to not delay the progress of the work.
5. The CITY shall examine information submitted by CONSULTANT and render in writing or otherwise provide decisions in a timely manner.
6. The CITY shall furnish required information and approvals in a timely manner.
7. The CITY shall cause all agreements with the CONTRACTOR to be consistent with CONSULTANT's Agreement.

END OF EXHIBIT "A"

ATTACHMENT "A-1"

ELECTRICAL DELIVERABLES

The CONSULTANT'S electrical drawings will consist of:

1. Single Line Diagrams – Showing major feed points, meters, transformers, switchgear, MCCs and loads.
2. Equipment Plans – Showing the location of equipment
3. Conduit Development Diagrams – Showing major equipment and necessary interconnections as block diagrams
4. Conduit Schedules – Providing conduit size, wire size and number of wires for each conduit.

Conduit interconnections will be indicated on the Conduit Development Drawings. The equipment plan views provide information to show where equipment is located for purposes of determining conduit lengths for Contractor take-offs. The plan views are to be used in conjunction with the conduit developments and conduit schedules for pricing the work in the Contractor's bid.

The conduit development provides a pictorial view of all the conduit interconnections. As stated above, the Contractor is to use the equipment plan views with the conduit developments and conduit schedules to determine the Contractor's bid price for conduits and wiring. Further, the Conduit Developments indicate where the Engineer intends for the Contractor to utilize exposed or encased conduits by indication of solid (exposed) or dashed (encased) line work.

The Electrical Contractors will be required to lay out the exact conduit runs in the field based on these drawings. They will provide installation drawings, which will be reviewed as shop drawings. The bold verbiage below is an example of the requirements to be added to CONSULTANT standard Specification Section 16110:

CONTRACTOR shall submit installation drawings including individual conduit numbers, routing, termination drawings, conduit sizes, circuit numbers contained in each conduit, and number and size of wires in each conduit to the ENGINEER for approval. The drawings shall show detailed conduit routing before installation of conduit. These drawings shall be used as the "as-built" record drawings, with all field corrections noted. They shall detail the underground duct banks, showing where they terminate and stub up in trenches, etc. The drawings shall also contain cross-section layouts of the conduits where more than eight conduits are included in one duct. The CONTRACTOR shall also detail exposed conduit routing and show the routing of pipes, HVAC ducts, etc., clearly indicating that the conduit routing will not have interference as required by the drawings specifying these layouts. The drawings shall be a minimum of 24 inches by 36 inches. These drawings are to be submitted and approved before any conduit installation is begun.

ATTACHMENT "A-2"
I&C DELIVERABLES

The CONSULTANT'S I&C drawings will consist of:

1. P&ID Drawings – Produced in industry standard format showing three levels: field, PLC and HMI. The existing P&ID and proposed process will serve as schematic backgrounds for the PROJECT I&C modification. Pertinent amounts of the existing system will be shown where there is expansion.
2. PROJECT SCADA system architecture block diagram finalized from the P&ID drawings developed during the preliminary design. The existing SCADA block diagram will be used as a background for the PROJECT block diagram.
3. Input/Output (I/O) list of hard wired and digital bus field I/Os
4. Example Loop Diagram Drawings – Up to ten loop diagrams will be developed to serve as examples of quality, detail and identification required by the CITY in construction contractor's I&C submittals.

A copy of several existing HMI graphic screens as a sample for the contractor, will be included on the drawings or as an appendix to the specifications.

The CONSULTANT'S I&C specifications will be CONSULTANT standard I&C specifications modified to include PROJECT:

1. Finalized control strategies, further developed from the preliminary control strategies.
2. Field Instrument and Software requirements
3. Control system supplier Pre-qualification specification
4. Shop drawing submittal and O&M manual requirements/procedures as requested by the CITY.
5. Schedule of operational readiness tests as requested by the CITY.
6. Standardization requirements as prepared by CITY during the PROJECT.

ATTACHMENT "A-3"
ANTICIPATED CONTRACT DOCUMENTS

The following contract drawings and specifications form the basis of anticipated design work for this PROJECT. These summary lists represent the expected level of effort and types of facilities that may be designed. Many of these documents will be duplicated and/or omitted in each design package in order to produce complete and separate bid packages.

Contract Drawings

GENERAL

- 1 Cover Sheet
- 2 Location and Vicinity Maps
- 3 Index of Drawings
- 4 General Symbols and Abbreviations
- 5 Overall Site Plan

CIVIL

- 6 Civil General Notes
- 7 Civil Symbols and Abbreviations
- 8 Standard Civil Details - 1
- 9 Standard Civil Details - 2
- 10 Civil Details
- 11 Key Plan

I&C

- 12 Instrumentation symbols and abbreviations sheet 1
- 13 Instrumentation symbols and abbreviations sheet 2
- 14 General instrumentation details
- 15 Example Loop Drawing 1
- 16 Example Loop Drawing 2
- 17 Example Loop Drawing 3
- 18 Example Loop Drawing 4
- 19 Example Loop Drawing 5
- 20 Example Loop Drawing 6
- 21 Example Loop Drawing 7
- 22 Example Loop Drawing 8
- 23 Example Loop Drawing 9
- 24 Example Loop Drawing 10
- 25 Headworks
- 26 Valve Actuator Replacement
- 27 Aeration System Blow-off
- 28 Filter Influent Gates
- 29 UV Disinfection

STRUCTURAL

- 30 General Structural Details - 1
- 31 General Structural Details - 2
- 32 General Structural Details - 3
- 33 General Structural Details - 4
- 34 General Structural Details - 5
- 35 General Structural Details - 6
- 36 General Structural Details - 7
- 37 Headwork Building Plans, Sect, & Details
- 38 UV Disinfection - Demolition

- 39 UV Disinfection - Plan
- 40 UV Disinfection - Section
- 41 UV Disinfection - Details

ARCHITECTURAL

Not applicable

MECHANICAL

- 42 Mechanical Abbreviation and Symbols
- 43 Mechanical Piping Schedule
- 44 Mechanical Equipment Schedules No.1
- 45 Mechanical Equipment Schedules No.2
- 46 Mechanical Details No. 1
- 47 Mechanical Details No. 2
- 48 Existing Screen Building Plan
- 49 Existing Screen Building Sections
- 50 Screen Details
- 51 Valve Actuator Replacement Plan and Sections
- 52 Valve Actuator Replacement Details
- 53 Existing Aeration System Blow-off Plan and Sections
- 54 Filter Influent Gates - Plan
- 55 Filter Influent Gates - Section
- 56 Filter Influent Gates - Details
- 57 UV Disinfection - Demolition
- 58 UV Disinfection - Plan
- 59 UV Disinfection - Section
- 60 UV Disinfection - Details

ELECTRICAL

- 61 General Electrical Symbolology - I
- 62 General Electrical Notes and Abbreviations
- 63 Electrical Standard Details - I
- 64 Overall Electrical Site Plan
- 65 Overall Electrical Single Line Diagram
- 66 Electrical Single Line Diagram and Equipment Elevation
- 67 Electrical Single Line Diagram and Equipment Elevation
- 68 Electrical Control Schematic - I
- 69 Electrical Control Schematic - II
- 70 Panelboard Schedules
- 71 Conduit Schedule - I
- 72 Existing Electrical Building Power Plan
- 73 Existing Screen Building - Demolition Plan
- 74 Existing Screen Building Power and Control Plan
- 75 Valve Actuator Replacement Power and Control Plan
- 76 Filter Influent Gates
- 77 UV Disinfection - Demolition
- 78 UV Disinfection - Plan

Contract Specifications

DIV 1 - GENERAL REQUIREMENTS

01010	Summary of Work
01025	Measurement and Payment
01070	Abbreviations of Institutions
01090	Reference Standards
01300	Contractor Submittals
01301	Schedule of Values
01311	CPM Construction Schedule
01313	Construction and Schedule Constraints
01400	Quality Control
01505	Mobilization
01510	Temporary Utilities
01520	Security
01530	Protection of Existing Facilities
01532	Site Condition Surveys
01550	Site Access and Storage
01560	Temporary Environmental Controls
01580	Project Sign
01590	Field Offices, Equipment, and Services
01600	Products, Materials, Equipment and Substitutions
01640	Demolition and Reconstruction
01650	Testing and Disinfection of Concrete and Steel Water Structures
01655	Gravity Pipeline Testing
01656	Pressure Pipe Testing and Disinfection
01660	Equipment Testing and Plant Startup
01670	Owner Staff Training
01700	Project Closeout

DIVISION 2 - SITE CONSTRUCTION

02100	Site Preparation
02200	Earthwork
02210	Controlled Low Strength Material
02268	Erosion Control Barrier
02460	A.C. Pavement and Base
02565	Ductile Iron Pipe (AWWA C151, Modified)
02570	Steel Pipe, Specials and Fittings (AWWA C200, Modified)
02595	Small Poly Vinyl Chloride Non-Pressure Pipe, Rubber Joints (ASTM D 3034, Modified)

DIVISION 3 - CONCRETE

03100	Concrete Formwork
03200	Reinforcement Steel
03290	Joints in Concrete
03300	Cast-in-Place Concrete
03315	Grout

DIVISION 4 - MASONRY

04232	Reinforced Concrete Block Masonry
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DIVISION 5 – METALS

05100	Structural Steel Framing
05210	Open Web Steel Joists
05300	Metal Decking
05400	Cold Formed (Light) Metal Framing
05500	Miscellaneous Metalwork

DIVISION 6 - WOOD AND PLASTIC

06100	Rough Carpentry
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DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07110	Sheet Membrane Waterproofing
07210	Building Insulation
07541	Single-Ply Roofing
07600	Flashing and Sheet Metal
07720	Roof Accessories
07920	Sealants and Caulking

DIVISION 8 - DOORS AND WINDOWS

08110	Steel Doors and Frames
08330	Overhead Coiling Doors
08710	Finish Hardware

DIVISION 9 - FINISHES

09250	Gypsum Board
09800	Protective Coating

DIVISION 10 - SPECIALTIES

10400	Identifying Devices
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DIVISION 11 - EQUIPMENT

11000	Equipment General Provisions
11100	Pumps, General
11289	Low Pressure/High Intensity Ultraviolet Disinfection System
11325	Grit Collectors and Conveyors
11332	Mechanically-Raked Bar Screens
11500	Blowers, Compressors, and Vacuum Pumps, General
11511	Compressors, Tank-Mounted, Reciprocating

DIVISION 12 – FURNISHINGS (NOT USED)

DIVISION 13 - SPECIAL CONSTRUCTION (NOT USED)

DIVISION 14 - CONVEYING SYTEMS (NOT USED)

DIVISION 15 - MECHANICAL

15000	Piping, General
15005	Piping Identification
15006	Pipe Supports
15025	Steel Pipe (ASTM A 53/A 106, Modified)
15030	Stainless Steel Pipe (ASTM A 312, Modified)
15037	Copper Water Tube (ASTM B 88, Modified)
15046	Corrosion Resistant Cast Iron Soil Pipe (ASTM A 518/A 861, Modified)
15065	Chlorinated Poly Vinyl Chloride Pressure Pipe (ASTM F 441, Modified)
15070	Fiber Glass Reinforced Plastic Pipe (ASTM D 2996/D 2997, Modified)
15200	Valves, General
15201	Valve and Gate Actuators
15202	Butterfly Valves
15203	Check Valves
15204	Ball Valves
15205	Diaphragm Valves
15230	Miscellaneous Valves
15250	Hydraulic Gates, General
15254	Slide/Stop Gates

DIVISION 16 - ELECTRICAL

16050	Electrical Work, General
16110	Electrical Raceway Systems
16111	Underground Raceway Systems
16120	Wire and Cable
16400	Low Voltage Transformers and Switchgear
16431	Protective Device Studies
16450	Grounding
16455	Variable Frequency Drive Units
16460	Electric Motors
16470	Panel Boards and General Purpose Dry Type Transformers
16480	Low Voltage Motor Control Center
16500	Lighting
16780	Alarm and Detection Systems
16950	Electrical Tests

DIVISION 17 - INSTRUMENTATION AND CONTROLS

17000	Prequalification for Process Control and Instrumentation Systems
17100	Process Control and Instrumentation Systems
17102	In-Line Liquid Flow Measuring Devices
17103	Liquid Flow Detection Devices
17104	Gas Flow Measuring System
17105	Gas Flow Detection Devices
17106	Level Measuring Systems
17107	Level Detection Switches
17108	Pressure Measuring Systems
17109	Pressure Detection Switches
17110	Temperature Measuring Systems
17113	Safety Monitoring Systems
17200	Control Panels
17201	Control Panel Instrumentation
17300	Control Strategies
17510	PLC-Based Control Systems Hardware
17520	PLC-Based Control Systems Software

EXHIBIT “B”

REQUIRED SUBMITTALS

CONSULTANT shall provide the following submittals, delivered to the City unless noted otherwise.

Task 1: Concept Development

Subtask 1.1 - Compile, Organize, and Summarize Existing Documents and Data

Work Product: List of existing documents and information, organized by subject area.

Subtask 1.2: Future Flow Projections.

Work Product: Draft and Final Technical Memoranda

Subtask 1.3: Screening System Replacement

Work Product: Draft and Final Technical Memoranda

Subtask 1.4: Replace Existing Actuators.

Work Product: Draft and Final Technical Memoranda

Subtask 1.5: Aeration System Blow-off.

Work Product: Draft and Final Technical Memoranda

Subtask 1.6: Disinfection.

Work Product: Draft and Final Technical Memoranda

Subtask 1.7: TDS Evaluation.

Work Product: Draft and Final Technical Memoranda

Subtask 1.8: Filter Influent Gate Replacement.

Work Product: Draft and Final Technical Memoranda

Task 2: Preliminary Design

Subtask 2.11: Preliminary Design Report

Work Product: Draft and Final Preliminary Design Reports.

Task 3: Design Development

Subtask 3.9: Design Development Workshop

Work Product: Design Development drawings and specifications.

Task 4: Detailed Design Development

Subtask 4.10: Detailed Design Development Workshop

Work Product: Detailed Design Development drawings and specifications.

Task 5: Construction Document Development

Subtask 5.2: Final Contract Document Completion

Work Products: Final contract documents

Task 6: Opinions of Probable Construction Cost

- Task 2 - Preliminary Design – “Class 4” level estimate
- Task 3 - Design Development – “Class 3” level estimate
- Task 4 – Detailed Design Development – “Class 2” level estimate

Task 8: Regulatory Approval and Permitting

Subtask 8.1: Prepare Permit Documents

Work Product: Permitting agency documents

Subtask 8.2: Permitting Agency Meetings

Work Products: Project Synopsis, drawing sets and architectural renderings for permit agencies.

Task 9: Assist in Bidding

Subtask 9.3: Respond to Bidders Questions

Work Product: Responses to bidders' questions; Log of significant bidder's questions.

Subtask 9.4: Prepare Addenda

Work Product: A total of two addenda to be produced

Subtask 9.6: Review Bids

Work Product: Bid evaluation letter

Task 10: Services During Construction

Subtask 10.1: Conformed Documents

Work Product: Conformed documents

Subtask 10.2: Review Shop Drawings, Samples and Submittals

Work Product: Shop drawing reviews

Subtask 10.3: Review Manufacturers' Technical Manuals

Work Product: Manufacturers' Technical Manual reviews

Subtask 10.4: Requests for Information

Work Product: RFI responses

Task 11: Services Post Construction

Subtask 11.1: Record Drawings

Work Product: Record Drawings

Task 12: Project Management and Coordination

Subtask 12.1: Prepare Project Work Plan and Conduct Kickoff Meeting

Work Product: Project Work Plan

Subtask 12.2: Project Monitoring, Administration, and Status Reporting

Work Product: Monthly status reports

Subtask 12.3: Invoicing

Work Product: Monthly invoices

Task 13: Subconsultant Services

Subtask 13.3: Geotechnical Subconsultant

Work Product: Geotechnical Report

END OF EXHIBIT "B"

EXHIBIT "C"

PERFORMANCE SCHEDULE

Notice to Proceed

The start date for the Consultant's scope of services shall be, without any further notice requirement, the date of this Agreement signed by the parties. The Consultant shall perform the services required as expeditiously as is consistent with professional skill and care and the orderly progress of the Project. The Scope of Service set forth in this Agreement and the compensation to the Consultant for said Scope of Services is based upon the Consultant and the City each performing its responsibilities in a timely manner.

The following schedule is draft and under review.

Task Schedule – Maintenance Items (Bid Package 1)

Task	Calendar Days to Complete	Remarks
Task 1 Concept Development	60	Includes City Reviews
Task 2 Preliminary Design	30	
Task 3 Design Development		Assumes no intermediate deliverable
Task 4 Detailed Design Development	30	Includes City Reviews
Task 5 Construction Document Development	30	Includes City Reviews
Task 9 Bidding Assistance		City Determined
Task 10 Services During Construction		TBD
Task 11 Services Post Construction		

Task Schedule – Process Upgrades (Bid Package 2)

Task	Calendar Days to Complete	Remarks
Task 1 Concept Development	90	Includes City Reviews
Task 2 Preliminary Design	60	
Task 3 Design Development	90	
Task 4 Detailed Design Development	90	Includes City Reviews
Task 5 Construction Document Development	30	Includes City Reviews
Task 9 Bidding Assistance		City Determined
Task 10 Services During Construction	540	18 months anticipated
Task 11 Services Post Construction	90	

END OF EXHIBIT "C"

EXHIBIT "D"

FEE BREAKDOWN

Total Compensation

The total compensation to be paid to the Consultant for performance of this Agreement including Basic Services, Additional Services, and Reimbursable Expenses shall not exceed \$1,650,538. Increases to total compensation may only be authorized by written amendment to this Agreement. This total compensation amount is comprised of the parts described in this Exhibit "D" (Fee Breakdown).

Basic Services Payment Based on the Completion of Tasks

For the services set forth in Exhibit "A" (Scope of Services), the City agrees to pay to the Consultant the fixed fee assigned for each phase of the Project identified in this Exhibit "D" (Fee Breakdown). The Consultant agrees to perform the services required under this Agreement Exhibit "A" (Scope of Service) for the amount of the fixed fee set forth in this Exhibit "D" (Fee Breakdown). Payment shall be made for each phase pursuant to monthly invoices submitted in accordance with the Agreement based upon the percentage of completion for each phase. The fixed fee shall constitute the entire compensation to be paid to the Consultant regardless of the number of man-hours actually expended to complete the performance of the services set forth in Exhibit "A" (Scope of Services).

Scope of Work		Total	Total Project
	Total Hours	Subconsultants	Budget
1.0 Concept Development	684	\$ -	\$ 103,496
CONCEPT DEVELOPMENT SUBTOTAL	684	\$ -	\$ 103,496
2.0 Preliminary Design	768	\$ -	\$ 123,206
3.0 Design Development	707	\$ -	\$ 109,819
4.0 Detailed Design Development	839	\$ -	\$ 135,508
5.0 Construction Document Development	246	\$ -	\$ 42,576
6.0 Opinions of Probable Construction Cost	60	\$ 22,835	\$ 32,201
7.0 Quality Control	241	\$ -	\$ 49,494
8.0 Regulatory Approval and Permitting	42	\$ -	\$ 8,231
9.0 Bidding Assistance	147	\$ -	\$ 21,511
DESIGN SUBTOTAL	3,050	\$ 22,835	\$ 522,546
10.0 Services During Construction	850	\$ -	\$ 106,892
11.0 Services Post Construction	225	\$ -	\$ 35,751
SERVICES DURING CONSTRUCTION SUBTOTAL	1,075	\$ -	\$ 142,644
12.0 Project Management and Coordination	515	\$ -	\$ 84,258
13.0 Subconsultant Services	0	\$ 2,820	\$ 2,820
PM & SUBS SUBTOTAL	515	\$ 2,820	\$ 87,078
AUTHORIZED PROJECT TOTALS	5,325	\$ 25,666	\$ 855,764
ADDITIONAL SERVICES SUBTOTAL			\$ 794,774
POTENTIAL PROJECT TOTALS			\$ 1,650,538

Allowance for Additional Services

A Not-To-Exceed Allowance for Additional Services is hereby established as set forth below. The City Representative has authority to pre-authorize in writing Additional Services up to the Total Not-To-Exceed Cost. Services performed prior to receiving the required written authorization or in excess of the Total Not-To-Exceed Cost shall not be obligated for compensation.

Additional Services are services that are not set forth in Exhibit "A" (Scope of Services).

The Consultant shall be compensated for Additional Services in accordance with the Additional Services fees set forth in Exhibit "E" (Additional Compensation), or if no Additional Service fee has been established for the service, in accordance with the Consultant Hourly Rates established in

Exhibit "E" (Additional Compensation). Additional Service compensation disputes shall be resolved in accordance with the claims and disputes provisions of this Agreement and shall not be cause for the Consultant to delay providing requested services. Payment shall be made for each completed Additional Service pursuant to invoices submitted in accordance with the Agreement.

Increases to this Total Not-To-Exceed Cost for Additional Services may only be authorized by written amendment to this Agreement.

ADDITIONAL SERVICES ALLOWANCE		ALLOWED SERVICES
TOTAL NOT-TO-EXCEED COST	\$794,774	

END OF EXHIBIT "D"

EXHIBIT "E"

ADDITIONAL COMPENSATION

CONSULTANT HOURLY RATES

The following hourly rates are to be used as the basis for negotiation of added and reduced services. These hourly rates are subject to a 4% annual increase for the duration of the Project and include salary costs, overhead and profit. The overhead included in these rates covers all support personnel who normally work on non-specific project tasks including but not limited to receptionists, senior executives together with their assistants, financial accounting personnel, and facility, equipment, and IT maintenance personnel. The hourly CAD rate and associated project cost (APC) are \$9.72 and \$16.75 respectively.

CLASSIFICATION	RATE	UNIT
Company Officer	\$255	Per Hour
Principal Professional II	\$225	Per Hour
Principal Professional I	\$195	Per Hour
Supervising Engineer	\$165	Per Hour
Senior Engineer	\$135	Per Hour
Professional	\$105	Per Hour
Associate Professional	\$90	Per Hour
Assistant Professional	\$60	Per Hour
Supervising Designer	\$135	Per Hour
Senior Designer	\$120	Per Hour
Designer	\$90	Per Hour
Senior Contracts Administrator	\$105	Per Hour
Administrative Assistant	\$75	Per Hour

ADDITIONAL SERVICES

The cost of the following potential future Additional Services have been negotiated as of the date of this Agreement.

ADDITIONAL SERVICE	SUBMITTALS	SCHEDULE IMPACT	FIXED FEE
None authorized or anticipated as of the date of this Agreement.			\$0
			\$0
			\$0

These fees are valid for the duration of the Project and include salary costs, equipment, overhead, administration and profit. For Additional Services of sub-consultants, the City shall compensate the Consultant a multiple of one and one tenth (1.10) times the amounts billed to the Consultant for such services, which multiple has been included in the Additional Services fees shown herein.

The Consultant agrees to provide services in connection with the Project which are in addition to those required by Exhibit "A" for Basic Services as Additional Services if so requested by the City in writing. Such requests may included, but are not limited to, and are not necessarily indicated by this statement as being Additional Services rather than Basic Services: (i) significant changes in the Project's size, quality, complexity, budget, or time schedule, (ii) changes required due to conflicting instructions previously given by the City, (iii) changes required by the enactment or amendment to codes, laws or regulations subsequent to the preparation of such documents, (iv) services concerning the replacement of that portion of the Project damaged by fire or other cause, and (v) services made necessary by the default or failure of the Contractor including major defects or deficiencies in the construction.

Task 14: Additional Services

Upon the request of the CITY, CONSULTANT shall provide Additional engineering services that are not described in Exhibit "A." For any such work, CONSULTANT shall first furnish a written scope, cost estimate, and revised schedule that the CITY shall approve in writing before CONSULTANT may proceed with the work. Additional Services might include:

Subtask 14.1: I&C Integration

This task consists of the services of a third-party Instrumentation and Controls (I&C) Integrator to coordinate and support design and construction activities for the CITY SCADA system.

Subtask 14.2: Advanced Oxidation Pilot Testing

This task consists of unspecified engineering assistance to the City should it decide to pilot test advanced oxidation pilot testing at the DHWRC.

Subtask 14.3: 3D Modeling

This task consists of additional three dimensional (3D) modeling support (from approximately 60 to 90 percent design), should the City elect for CONSULTANT to develop a 3D model of the final design of new facilities at the DHWRC.

Subtask 14.4: Excess Shop Drawing Submittal Review

This task consists of additional shop drawing review assistance, should it become necessary due to various causes, including whether the Contractor fails to achieve satisfactory submittals within two submissions, and the total number of submittals or the level of effort required exceed anticipated requirements.

Subtask 14.5: Excess Request of Information (RFI) Review

This task consists of additional RFI review assistance, should it become necessary due to various causes, including whether the total number of submittals or the level of effort required exceed anticipated requirements.

Subtask 14.6: Deficient and Non-conforming Work

Should the Construction Manager or City discover or believe that any work by the CONTRACTOR is not in accordance with the contract for construction, or is otherwise defective, not conforming to requirements of the contract or applicable rules and regulations, the City may authorize CONSULTANT to provide additional assistance for review or development of corrective actions.

Subtask 14.7: Factory and Off-Site Tests and Inspections

CONSULTANT, upon approval of the CITY, may coordinate tests and inspections of work, materials and equipment for the PROJECT at off-site facilities and suppliers, as specified in the contract for construction. CONSULTANT shall, upon approval of the CITY, attend tests and inspections of work, material and equipment for the Project at off-site facilities and suppliers.

Subtask 14.8: Performance and Witness Testing

CONSULTANT may attend and witness field and factory performance tests as specified in the contract for construction and CONSULTANT contract scope, if requested by CITY.

Subtask 14.9: Subsurface and Physical Conditions

If requested by CITY, CONSULTANT will advise and assist the CITY in responding to the CONTRACTOR when the CONTRACTOR notifies the Construction Manager or CITY of subsurface or physical conditions at the site which the contract for construction provides should be so investigated.

Subtask 14.10: Start-up Assistance

During the commissioning and startup of equipment, CONSULTANT may provide facility startup assistance as requested by the CITY. The facility startup assistance may consist of reviewing the CONTRACTOR's equipment and system testing efforts for compliance with the contract documents. CONSULTANT may also evaluate equipment and system test results and make recommendations to the CITY regarding the advisability of proceeding with further testing and facility start-up. This includes verification of the performance of installed instrumentation and control systems following their installation.

Subtask 14.11: Commissioning Team Meetings

Representatives of CONSULTANT may attend and participate in commissioning team meetings as requested by the CITY.

Subtask 14.12: Warranty Period Services

CONSULTANT may provide the following warranty performance review services during the one-year warranty period to assist the CITY in coordinating corrections of deficient equipment or construction:

- Participate in an end-of-warranty period inspection one month prior to completion of the warranty period and provide a letter identifying any deficiencies found and recommended actions.
- Make periodic visits to the site during the warranty period to monitor contract deficiencies in workmanship, materials or equipment and prepare correspondence informing the CONTRACTOR of such deficiencies.
- Provide periodic onsite observation during correction of the deficiencies.

Subtask 14.13: Additional Record Drawing Assistance

CONSULTANT may provide additional level of effort for development of complete record drawings as requested for actual level of effort required based on quality and completeness of Contractor as-built documents.

Subtask 14.14: Chlorination Disinfection Design

CONSULTANT will design a chlorination disinfection alternative using either purchased sodium hypochlorite, or onsite sodium hypochlorite generation. The major design elements shall include chlorine contact basins and a chemical storage and feed facility. The chlorine contact basins will be a buried structure. The chemical storage and feed facility may consist of below grade and above grade elements. The above grade portion shall have architectural treatment similar to existing plant structures. The Chemical feed and storage facility shall consist of the following systems:

- Sodium hypochlorite generation system
- Sodium hypochlorite storage
- Sodium hypochlorite chemical feed system
- Feedwater softening system (ion exchange)
- Salt/Brine dissolution and storage
- Process control instrumentation
- Electrical power supply
- HVAC/plumbing/fire suppression

Civil pipelines for hydraulic conveyance, and grading and paving will be provided for the new chlorination facilities. It is assumed that intermediate pumping of the process flow will not be required.

Subtask 14.15: Design Modifications

CONSULTANT will evaluate and/or develop modifications as requested or approved by the CITY for subsequent processing as change orders. Such design modifications may be initiated by the CONTRACTOR, by the CITY, or be required because of unforeseen conditions, information requests or design errors and omissions. CONSULTANT will review, as requested by the CITY, the CONTRACTOR's proposals for change order work and the technical aspects of any design modifications proposed by the CITY. The estimated level of effort for this task is based on an assumed design effort required for up to two (2) design modifications or change requests. For the purposes of budgeting, it is assumed that up to ten (10) man-days will be required to review and respond to each design modification request, and up to two (2) site visits per request will be made by process and design engineers from the various design disciplines. Additional requests, or levels of effort beyond these assumptions may be provided as Additional Services.

Work Product: CITY requested processing of change orders

Subtask 14.16: Miscellaneous Unspecified Services

1. Additional project phases or schedules.
2. Upgrade or modifications of any existing building or structures including a feasibility study to make sure the proposed modifications can be implemented cost-effectively.
3. Prepurchase of selected equipment.
4. Pre-negotiation of prices for selected equipment.
5. Modification or expansion of the I&C system for the existing facilities.
6. Significant modifications to existing I&C equipment or systems.
7. I&C or electrical control or wiring diagrams.
8. On-line or electronic O&M manuals
9. Rebar presentations in lieu of rebar schedule or abbreviated rebar presentation.
10. Value engineering or similar value analysis studies.
11. Any other services designated in this scope of services as additional services.

END OF EXHIBIT "E"

EXHIBIT "F"
KEY PERSONNEL LIST

CITY PERSONNEL

CITY REPRESENTATIVE: John Bettencourt

CONSTRUCTION PROJECT REPRESENTATIVE: TBD

CONSULTANT'S PROJECT STAFF

The following personnel will be assigned by the Consultant to work on the Project. Any changes require City approval.

PROJECT MANAGER: Michael Priest

PRINCIPAL IN CHARGE: Margaret Regan

TECHNICAL ADVISOR: Roger Stephenson

LEAD MECHANICAL ENGINEER: Ed Pascua

LEAD CIVIL ENGINEER: Chao Wong

LEAD STRUCTURAL ENGINEER: Cheuk Lee

LEAD ARCHITECT: N/A

LEAD I&C ENGINEER: Phil Atkinson

LEAD ELECTRICAL ENGINEER: Larry Phelps

SUBCONSULTANTS

I&C INTEGRATOR: TBD (City selection process)

SURVEYING: Poggemeyer

GEOTECHNICAL: Terracon

END OF EXHIBIT "F"

EXHIBIT "G"

DISCLOSURE OF OWNERSHIP/PRINCIPALS

1. Definitions

"City" means the City of Las Vegas.

"City Council" means the governing body of the City of Las Vegas.

"Contracting Entity" means the individual, partnership, or corporation seeking to enter into a contract or agreement with the City of Las Vegas.

"Principal" means, for each type of business organization, the following: (a) sole proprietorship – the owner of the business; (b) corporation – the directors and officers of the corporation; but not any branch managers of offices which are a part of the corporation; (c) partnership – the general partner and limited partners; (d) limited liability company – the managing member as well as all the other members.

2. Policy

In accordance with Resolution 79-99 and 105-99 adopted by the City Council, Contracting Entities seeking to enter into certain contracts or agreements with the City of Las Vegas must disclose information regarding ownership interests and principals. Such disclosure generally is required in conjunction with a Request for Proposals (RFP). In other cases, such disclosure must be made prior to the execution of a contract or agreement.

3. Instructions

The disclosure required by the Resolutions referenced above shall be made through the completion and execution of this Certificate. The Contracting Entity shall complete Block 1, Block 2, and Block 3. The Contracting Entity shall complete either Block 4 or its alternate in Block 5. Specific information, which must be provided, is highlighted. An Officer or other official authorized to contractually bind the Contracting Entity shall sign and date the Certificate, and such signing shall be notarized.

4. Incorporation

This Certificate shall be incorporated into the resulting contract or agreement, if any, between the City and the Contracting Entity. Upon execution of such contract or agreement, the Contracting Entity is under a continuing obligation to notify the City in writing of any material changes to the information in this Certificate. This notification shall be made within fifteen (15) days of the change. Failure to notify the City of any material change may result, at the option of the City, in a default termination (in whole or in part) of the contract or agreement, and/or a withholding of payments due the Contracting Entity.

Block 1	1. <u>Contracting Entity</u>
Name	MWH AMERICAS, INC.
Address	3010 W Charleston Blvd, Las Vegas, NV 89102
Telephone	702-878-8010
EIN or DUNS	869237024

Block 2	1.1 <u>Description</u> Subject Matter of Contract/Agreement: Durango Hills WRC Process Upgrades RFP #:
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Block 3	1.2 <u>Type of Business</u> <div style="display: flex; justify-content: space-between; align-items: center;"> <div> <input type="checkbox"/> Individual <input type="checkbox"/> Partnership <input type="checkbox"/> Limited Liability Company </div> <div style="text-align: center;"> x Corporation </div> </div>
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CERTIFICATE – DISCLOSURE OF OWNERSHIP/PRINCIPALS

(CONTINUED)

Block 4	2. <u>Disclosure of Ownership and Principals</u>		
<p>3. In the space below, the Contracting Entity must disclose all principals (including partners) of the Contracting Entity, as well as persons or entities holding more than one-percent (1%) ownership interest in the Contracting Entity.</p>			
	FULL NAME/TITLE	BUSINESS ADDRESS	BUSINESS PHONE
1.	MWH Holdings, Inc (100%)	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
2.	Dr. Carol Moseley Braun Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
3.	Janet Linden Cooper Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
4.	Alan J. Fohrer Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
5.	Charles L. (Jerry) Henry Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
6.	Robert B. Uhler/Chairman and CEO, Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
7.	Donald L. Smith Vice Chairman and Chief of Strategy, Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
8.	Alan J. Krause President and Chief Operating Officer, Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
9.	Dan McConville President - MWH Americas, Inc., Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
10.	Joseph D. Adams, Jr. President - MWH Constructors, Inc., Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
11.	Paul F. Boulous President - Middle East President - MWH Soft, Inc., Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
12.	Bruce K. Howard President - MWH Business Solutions, Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
13.	David Nickols President - Europe-Africa, Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900
14.	Marshall Davert, PE, PhD President - Asia-Pacific, Director	380 Interlocken Crescent, Ste 200 Broomfield, CO 80021	303-533-1900

The Contracting Entity shall continue the above list on a sheet of paper entitled "Disclosure of Principals – Continuation" until full and complete disclosure is made. If continuation sheets are attached, please indicate the number of sheets: _____

Block 5	3.1.1 Disclosure of Ownership and Principals - Alternate	
<p>If the Contracting Entity, or its principals or partners, are required to provide disclosure (of persons or entities holding an ownership interest) under federal law (such as disclosure required by the Securities and Exchange Commission or the Employee Retirement Income Act), a copy of such disclosure may be attached to this Certificate in lieu of providing the information set forth in Block 4 above. A description of such disclosure documents must be included below.</p>		
Name of Attached Document: _____		
Date of Attached Document: _____		Number of Pages: _____

I certify, under penalty of perjury, that all the information provided in this Certificate is current, complete, and accurate. I further certify that I am an individual authorized to contractually bind the above named Contracting Entity.

Kenneth E Lykens Jr. - Kenneth E Lykens Jr.
Name

9/23/2009
Date

Subscribed and sworn to before me this 23rd day of

September, 2009.

Christine M. Smith

Notary Public

